

**EPA REGISTRATION NUMBER 2724-446 – VOL. 2**

S. Reilly

BPPD PRAT ACTION CODING FORM

P.M. 90: Janet Andersen

A. Bryceland

REGISTRANT/COMPANY NAME:

Wellmark International

Fast Track: Yes ☒ No ☐

Reviewer FTT

Assigned by sdh 10/7/02

EPA REG./FILE SYMBOL 2724-446

[Note: If Fast Track, you may need to change Reviewer's Name in PRAT.]

ACTION CODE 300

(New A.I./EUP'S/Tolerances: Yes ☐ No ☐)

Label Amendment:  
Revisions to first  
aid + environmental  
hazard statements

DATE OF APPLICATION 9/14/02

EPA RECEIVED DATE 9/16/02

BPPD RECEIVED DATE 10/4/02

SUBMISSION BARCODE 5623006

ASSIGNED IN PRAT: Yes ☒ No ☐

COMPLETED BY T. Bethen DATE 10/8/02

LOGGED IN BRATS: Yes ☒ No ☐ DATE 10/9/02 COMPLETED BY cp

RAL RECEIVED \_\_\_\_\_ DATE \_\_\_\_\_  
(RAL initials)

\*\*\*\*\*

FINAL ACTION

Mailed & logged out of PRAT 10/24/02

RESPONSE CODE: \_\_\_\_\_

RESPONSE DATE: \_\_\_\_\_

MOS: \_\_\_\_\_ (1) Cite All  
\_\_\_\_\_ (+) Not Applicable  
\_\_\_\_\_ (3) Selective

CRP Yes ☐ No ☐  
Restricted Use: Yes ☐ No ☐  
Manufacturing Use: Yes ☐ No ☐  
Exclusive Use: Yes ☐ No ☐





204286

# NOTICE OF SUPPLEMENTAL REGISTRATION OF DISTRIBUTOR

(Please read instructions before completing)

H

EPA REGISTRATION NO. OF PRODUCT

DISTRIBUTOR COMPANY NUMBER

3 2724-446 5 40-B-1-3

64833 7

NAME AND ADDRESS OF BASIC REGISTRANT (print or type; include ZIP code)

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, Texas 75234

NAME OF REGISTERED PRODUCT (basic product name accepted by EPA)

Zoecon RF-379 Mosquito Growth Regulator SR-20

DISTRIBUTOR PRODUCT NAME

Zoecon Altosid Liquid Larvicide Concentrate

NAME AND ADDRESS OF DISTRIBUTOR (print or type; include ZIP code)

Vector Management Division  
A Division of Zoecon Corporation  
12200 Denton Drive  
Dallas, Texas 75234

## DISTRIBUTOR

We intend to market under the Distributor Product Name and Number specified above, subject to the conditions specified on this form.

SIGNATURE AND TITLE OF DISTRIBUTOR

Patricia A. Howell, Regulatory Analyst

DATE

9/10/91

## REGISTRANT

It is requested that the Registration Record of this jacket include the Distributor Product specified above, subject to the conditions specified on this form.

SIGNATURE AND TITLE OF REGISTRANT

Patricia A. Howell, Regulatory Analyst

DATE

9/10/91

## INSTRUCTIONS

After a registrant has obtained final registration for the basic product, the registrant may then supplementally register and distribute his/her product. One form must be submitted for each distributor brand and must be signed by the distributor involved. The form must state the basic registration number and the distributor company number.

If a registrant has a potential distributor who does not have a company number assigned, she/he should have the distributor apply, on letterhead stationary, to the Registration Division to have a number assigned prior to submitting a Distributor Notification to the Agency.

Notification forms must be submitted by the basic registrant. They must have the concurrence and signature of both the registrant and the distributor.

When submitting several forms for the same basic product, submitting them together will facilitate processing.

**NOTE: DO NOT** submit distributor product labels.

## CONDITIONS

1. The distributor product must have the same composition as the basic registered product.
2. The distributor brand product must be manufactured and packaged by the same person who manufactures and packages the registered basic product.
3. The labeling for the distributor product must bear the same claims as the basic product, provided, however, that specific claims may be deleted if by doing so no other changes are necessary.
4. The product must remain in the manufacturer's unbroken container.
5. The label must bear the EPA registration number of the basic registered product, followed by a hyphen and the distributor's company number.
6. Distributor products must bear the name and address of the distributor qualified by such terms as "packed for . . .", "distributed by . . .", or "by . . ." to show that the name is not that of the manufacturer.
7. All conditions of the basic registration apply equally to distributor brand products. It is the responsibility of the basic registrant to see that all distributor labeling is kept in compliance with requirements placed on the basic product.

RECEIVED BY EPA REGISTRATION DIVISION ON THE DATE STAMPED BELOW

9-16-91





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

Ms. Nancy Huebl  
Wellmark International  
1000 Tower Lane, Suite # 245  
Bensenville, IL 60106

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Dear Ms. Huebl,

Subject: Wellmark International  
Zoecon RF-437 Mosquito Growth  
EPA Reg. NO. 2724-446  
Your submission of November 26, 1997

The submission of the above date submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, requesting approval of an alternate brand and PR Notice 97-5 compliance, as amended, is acceptable. A stamped copy is enclosed for your records.

Should you have any questions concerning this letter, please feel free to contact Mr. Willie H. Nelson at (703) 308-8682.

Sincerely,

Roy D. Sjoblad, Branch Chief  
Biopesticides and Pollution Prevention  
Division (7501W)

*Hold  
NOT  
MAILED  
OR  
SIGNED  
WHT*





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

Ms. Nancy Huebl  
Wellmark International  
1000 Tower Lane, Suite # 245  
Bensenville, IL 60106

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Dear Ms. Huebl,

Subject: Wellmark International  
Zoecon RF-437 Mosquito Growth  
EPA Reg. NO. 2724-446  
Your submission of November 26, 1997

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Sincerely,

Roy D. Sjoblad, Branch Chief  
Biopesticides and Pollution Prevention  
Division (7501W)



Ms. Nancy Huebl  
Wellmark International  
1000 Tower Lane, Suite # 245  
Bensenville, IL 60106

Dear Ms. Huebl,

Subject: Wellmark International  
Zoecon 9026 Fogger  
EPA Reg. NO. 2724-454  
Your submission of July 7, 1997

The submission of the above date submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable. A stamped copy is enclosed for your records.

Should you have any questions concerning this letter, please feel free to contact Mr. Willie H. Nelson at (703) 308-8682.

Sincerely,

Roy D. Sjoblad, Branch Chief  
Biopesticides and Pollution Prevention  
Division (7501W)

CONCURRENCES							
SYMBOL	W Nelson 308-8682, epa no. 2724-454, methoprene, 01/13/98						
SURNAME							
DATE							



Ms. Nancy Huebl  
Wellmark International  
1000 Tower Lane, Suite # 245  
Bensenville, IL 60106

Dear Ms. Huebl,

Subject: Wellmark International  
Zoecon 9026 Fogger  
EPA Reg. NO. 2724-454  
Your submission of July 7, 1997

The submission of the above date submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable. A stamped copy is enclosed for your records.

Should you have any questions concerning this letter, please feel free to contact Mr. Willie H. Nelson at (703) 308-8682.

Sincerely,

Roy D. Sjoblad, Branch Chief  
Biopesticides and Pollution Prevention  
Division (7501W)

CONCURRENCES							
SYMBOL	W Nelson	308-8682	epa no. 2724-454	Methoprene	01/13/98		
SURNAME							
DATE							



Wellmark

January 27, 1998

Document Processing Desk (NOTIF)  
Office of Pesticide Programs H7504C  
U.S. Environmental Protection Agency  
Room 266A Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, Virginia 22202

ATTENTION: Roy Sjoblad

SUBJECT: NOTIFICATION OF ALTERNATE BRAND NAMES  
FOR ZOECON RF-292 BRIQUET/EPA REG. NO. 2724-421  
FOR ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20/EPA REG. NO. 2724-446  
FOR ZOECON RF-330 ALTOSID PELLETS/EPA REG. NO. 2724-448

Dear Mr. Sjoblad:

Enclosed are completed EPA Forms 8570-1 to serve as notification of the following alternate brand names for the above:

2724-421	ZOECON® ALTOSID® XR Extended Residual Briquets
2724-446	ZOECON® ALTOSID® Liquid Larvicide Concentrate
2724-448	ZOECON® ALTOSID® Pellets

If you have any questions please, call me directly at 630/227-6017. Thank you for your assistance in this matter.

Yours sincerely,  
WELLMARK INTERNATIONAL

*Nancy Huebl*

Nancy Huebl  
Regulatory Label Specialist

enclosure

cc: S. Spaulding/C. Elmi

STAMP NO REVIEW  
NECESSARY &  
FILE IN JOCKETS  
JLK 2/2/98





United States  
Environmental Protection Agency  
Washington, DC 20460

☐ Registration  
☐ Amendment  
☒ Other

OPP Identifier Number

259579

## Application for Pesticide - Section I

1. Company/Product Number Wellmark International/2724-446	2. EPA Product Manager R. Sjoblad	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Zoecon RF-437 Wellmark International/Mosquito Growth Regular SR-20	PM# Biopesticides	
5. Name and Address of Applicant (Include ZIP Code) Wellmark International 1000 Tower Lane Bensenville IL 60106  <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

## Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Notification of alternate brand name: ZOECON ALTOSID LIQUID LARVICIDE CONCENTRATE

NOT REVIEWED  
In Accordance with PR Notice 82-2  
Based On Draft Labeling Dated  
1-27-98

## Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Metal	<input checked="" type="checkbox"/> Plastic
* Certification must be submitted				<input type="checkbox"/> Glass	<input type="checkbox"/> Paper
If "Yes" Unit Packaging wgt.	No. per container	If "Yes" Package wgt	No. per container	Other (Specify) _____	
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 0.75 OZ - 55 GAL	5. Location of Label Directions <input checked="" type="checkbox"/> On label		
6. Manner in Which Label is Affixed to Product		<input checked="" type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			
<input type="checkbox"/> Other _____					

## Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)			
Name Nancy Huebl	Title Regulatory Label Specialist	Telephone No. (Include Area Code) 630 227 6017	
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped)	
2. Signature 	3. Title Regulatory Label Specialist		
4. Typed Name Nancy Huebl	5. Date January 28, 1997		



MEMORANDUM  
OF CALL

Previous editions usable

TO:

850-488-5874

☐

YOU WERE CALLED BY—

☐

YOU WERE VISITED BY—

Gary Tucker

OF (Organization)

FL Dept of Agr

☐

PLEASE PHONE

▶ (Enter area code,  
if necessary)

☐

DSN

850-487-2130

☐

WILL CALL AGAIN

☐

IS WAITING TO SEE YOU

☐

RETURNED YOUR CALL

☐

WISHES AN APPOINTMENT

MESSAGE

↑ Methoprene label  
stamp label

2724-446

pg. missing

RECEIVED BY

DATE

TIME

10





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES  
OFFICE OF PESTICIDE PROGRAMS

BIOPESTICIDE POLLUTION PREVENTION DIVISION

FAX NUMBER: (703) 308-7026  
Telephone Number: (703) 308-8682

FACSIMILE REQUEST / COVER SHEET  
(Please type or print in BLACK INK only)

SEND FAX TO:

NAME: Mr Gary Tucker  
OFF: Florida Dept. of Agriculture  
FAX PHONE NUMBER: 850-488-50874  
OFFICE PHONE NUMBER: 850-487-2130

FROM:

NAME: WILLIE H. NELSON  
DIVISION/BRANCH: BIOPESTICIDE POLLUTION AND PREVENTION DIVISION  
OFFICE PHONE NUMBER: (703) 308-8682  
OFFICE ROOM NUMBER: 15  
MAIL CODE: 7501W DATE: 2/27/98 TIME: 13:05  
NUMBER OF PAGES (WITH COVER SHEET): 6

Special Message --- describe below:

Gary, Please find attached a  
copy of the labeling for EPA  
Reg No. 272.4-4414.

Willie



[ ] optional wording

## ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20

Prevents emergence of adult floodwater mosquitoes  
[Prevents the emergence of adult filter [moth] flies, and midges]  
[Keeps infestations under control]  
Prevents emergence of adult fleas up to 8 weeks outdoors  
Controls pre-adult fleas (larvae) up to 8 weeks  
Biorational [approach to] flea control outdoors  
Microencapsulated Formula

### ACTIVE INGREDIENT:

(S)-Methoprene [Isopropyl (2E,4E,7S)-11-methoxy-  
3,7,11-trimethyl-2,4-dodecadienoate]\* ..... 20.0%

INERT INGREDIENTS: ..... 80.0%

TOTAL: ..... 100.0%

Formulation contains 1.72 lb/gal (205.2 g/l) active ingredient

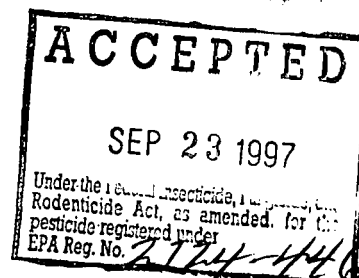
**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

See Back Panel For Additional Precautionary Statements

BECAUSE OF THE UNIQUE MODE OF ACTION OF ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20, SUCCESSFUL USE REQUIRES FAMILIARITY WITH SPECIAL TECHNIQUES RECOMMENDED FOR APPLICATION TIMING AND TREATMENT EVALUATION. SEE GUIDE TO PRODUCT APPLICATION OR CONSULT LOCAL MOSQUITO ABATEMENT AGENCY.

NET CONTENTS:





## PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

## ENVIRONMENTAL HAZARDS

This product is toxic to aquatic dipteran. Using it in a manner other than that described by the label could result in harm to aquatic dipteran. Do not contaminate water when disposing of rinsate or equipment washwaters.

## [INTRODUCTION]

[Zoecon RF-437 is a unique product that controls [mosquitoes][filter [moth] flies (*Psychoda* spp.)][midges (*Chironomidae*)] and other nuisance aquatic insect species [infesting waste water treatment facilities]. Zoecon RF-437 contains an insect growth regulator (IGR) that is effective on the developing [immature] stages of insect pests. Zoecon RF-437 does not kill adults but affects the larval stages as they grow and develop. Zoecon RF-437 stops the formation of pupa of insect pests, thereby eliminating adult populations. Zoecon RF-437 stops the cycle of reproduction, keeping pest infestations under control. Continued use of the product prevents these pests from rebounding into unmanageable infestations.]

## DIRECTIONS FOR USE:

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

## MIXING AND HANDLING INSTRUCTIONS:

1. **SHAKE WELL BEFORE USING.** Zoecon RF-437 may separate on standing and must be thoroughly agitated prior to dilution.
2. Do not mix with oil; use clean equipment.
3. Partially fill spray tank [container] with water; then add the recommended amount of Zoecon RF-437, agitate and complete filling. Mild agitation during application is desirable. [Agitation may be accomplished by use of recirculation pump, mixer, air pump, or other suitable equipment.]
4. Spray solution should be used within 48 hours; always agitate before spraying.

## RECOMMENDED APPLICATIONS

**Mosquito Control:** Zoecon RF-437 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator **has no effect when applied to pupae or adult mosquitoes.** Zoecon RF-437 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see **Guide to Product Application.**



**[Waste Water Treatment Facility Pests:** Zoecon RF-437 may be used in trickling filters, sludge drying beds, clarifiers, holding ponds, lagoons, influent structures, stagnant or standing water, or other areas of waste water treatment facilities where midges, filter [moth] flies, and other nuisance aquatic insect pests are a problem.]

**[What to Expect in Waste Water Treatment Facilities]**

**[Continuous Flow Sewage {waste water}]**

In order to achieve effective results, Zoecon RF-437 must be applied on a daily basis for at least two weeks. Failure to apply the material on a continuous basis may result in erratic results. Following initial applications of Zoecon RF-437, a gradual reduction in the number of adult pests will be seen over approximately a one week period. Reduction in adult populations will be very noticeable within a two week period following continuous application. Due to varying conditions or heavy infestations, the period to expect control may be longer. Since the mode of action of Zoecon RF-437 is to prevent adult emergence, existing adults and pupa present at the time of initial application will complete their life cycle.

As adult suppression peaks, a maintenance rate of Zoecon RF-437 may be used for continuous protection from population rebound. However, if application of Zoecon RF-437 is halted following population suppression, rebound of the population can be expected within 2 to 3 weeks after stopping application. Continued application of Zoecon RF-437 is recommended for continuous suppression throughout the pest season.

**Sludge or Solid Waste Applications**

For solid waste applications, the initial high rate is recommended. The dilution should be applied until the drying beds have been filled. Following filling of the drying beds, the application of the dilution may be halted. Applications of the dilution should be made at the influent side as the sludge or solids enter into the drying beds. Application of Zoecon RF-437 to solids will prevent the emergence of adult insect pests thereby keeping infestations under control.]

**METHODS OF APPLICATION**

**Aerial:** Use the recommended amount of Zoecon RF-437 listed below in sufficient water to give complete coverage. One-half to 5 gallons of spray solution per acre (4.7 to 46.8 liters/hectare) is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-437 in the appropriate volume of water to give the rate per acre recommended below.



**[Waste Water Treatment Facilities:]** [Zoecon RF-437 should be diluted with water prior to use. Application of Zoecon RF-437 may be made by use of a metering pump, drip bucket or other suitable equipment. Metering pumps are the most efficient and accurate method of application. Appropriate dilution of product will be influenced by the method of application. Depending on the dosage rate, the desired volume of dilution should be prepared to apply over a 24 hour period (day tank), or in cases of sludge beds, applied until the beds have been filled. When using delivery devices, it is important to calibrate the device to deliver the required amount of Zoecon RF-437 over a 24 hour period. Sufficient material may be mixed in advance to provide for applications longer than 24 hours.][Metering pumps that are capable of delivering material for greater than 24 hours are highly recommended.]

#### **APPLICATION RATE**

**Mosquitoes:** Apply  $\frac{3}{4}$  to 1 fl oz of Zoecon RF-437 per acre (55 to 73 ml/hectare) in water as directed.

#### **[Waste Water Treatment Pests:]**

**[Initial Application - 4 - 5 ounces Zoecon RF-437 per 1 million gallons of sewage [waste water] in sufficient water to uniformly apply at the influent side over a 24 hour period.]**

**[Maintenance Rate - 2.5 - 3.0 ounces Zoecon RF-437 per 1 million gallons of sewage [waste water] in sufficient water to uniformly apply at the influent side over a 24 hour period.]**

[To achieve effective results the initial application rates should be made on a daily basis for two weeks without interruption. Sufficient water/Zoecon RF-437 should be used to achieve uniform application to sewage [waste water] over a 24 hour period. Application of the dilution should be made at the influent side of the particular area to be treated.]

[Maintain initial rate of application for two weeks and then follow the directions for the maintenance rate for continued effectiveness.]

**Fleas:** Apply 1 fluid ounce of Zoecon RF-437 per 1000 square feet in water as directed.

#### **APPLICATION SITES**

**Pastures:** Zoecon RF-437 may be applied after each flooding without removal of grazing livestock.

**Rice:** Zoecon RF-437 must be applied to 2nd, 3rd, and/or 4th instar larvae of mosquitoes found in rice, usually within 4 days after flooding. Zoecon RF-437 treatment may be repeated with each flooding.

**Intermittently Flooded Noncrop Areas:** Zoecon RF-437 may be applied as directed above when flooding may result in floodwater mosquito hatch. Typical sites include freshwater swamps and marshes, salt marshes, woodland pools and meadows, dredging spoil sites, drainage areas, **waste treatment and settling ponds**, ditches and other natural and manmade depressions.



**Crop Areas:** Zoecon RF-437 may be applied to irrigated croplands after flooding to control mosquito emergence. Examples of such sites are vineyards, rice fields (including wild rice), date palm orchards, fruit and nut orchards and berry fields and bogs. Irrigated pastures may be treated after each flooding **without** removal of livestock.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-437 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**For Fleas Outdoors:** (1) When using a hose-end sprayer, place 0.75 ounces of Zoecon RF-437 in bottle, add 6 ounces of water and apply at low pressure. (2) Make sure to apply at 0.75 ounces of Zoecon RF-437 per 15 gallons of water. (3) Apply 0.75 ounces of Zoecon RF-437 in 15 gallons of water to every 750 square feet of residential turf. (4) Pay particular attention to areas where pets frequent, such as, in and around dog houses and runs, and around shrubs, outside decks, and porches. (5) If a large population of fleas is present, [an outdoor flea control product][brand name of outdoor flea control product] should be used for initial kill of adult fleas.

**[Waste Water Treatment Facilities:** Applications of Zoecon RF-437 may be made to sewage as it flows into trickling filters, sludge drying beds, clarifiers, holding ponds, lagoons, influent structures, stagnant or standing water, or other areas of waste water facilities where pests are a problem.

Applications of Zoecon RF-437 should be made as the sewage enters {influent areas} the targeted processing area. Failure to add the material at the influent side may result in erratic results.]

**TANK MIXING INSTRUCTIONS:** Zoecon RF-437 may be tank mixed with liquid *Bacillus thuringiensis* variety *israeliensis* (*B.t.i.*) formulations, such as **TEKNAR® HP-D** (or its equivalent). The ratio of **TEKNAR HP-D** to Zoecon RF-437 should range from **24:1** to **50:1** (volume/volume). For example, to prepare a **50:1** tank mix, add 1 gallon of RF-437 to **50** gallons of *B.t.i.* This tank mix can be applied to sites listed above at rates of 2 to 16 fluid ounces/acre (0.15-1.2 liters/hectare).

The user, at his discretion can [tank] mix Zoecon RF-437 with an adulticide currently registered for use unless the product label prohibits such mixing. Use of the resulting tank mixture must be used in accordance with the more restrictive label limitations and precautions.

**CHEMIGATION:** Refer to supplemental labeling entitled "**Guide to Product Application**" for use directions for chemigation. Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed.



**STORAGE AND DISPOSAL: STORAGE:** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. **DISPOSAL:** Triple rinse or equivalent. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

TEKNAR® HP-D is a registered trademark of Novartis.

For information, call 1/800-XXX-XXXX.

Wellmark International  
Bensenville, IL 60106

EPA Reg. No.: 2724-446

EPA Est. No.:  
Made in USA



## ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20

### PREVENTS EMERGENCE OF ADULT FLOODWATER MOSQUITOES

#### GUIDE TO PRODUCT APPLICATION

##### FOR THE FIRST TIME USER

ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20 (SR-20) is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

SR-20, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. SR-20 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides. SR-20 differs from other larvicides you may have used only in the manner and time course of its action after application.

SR-20 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides. After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive. Because the effect of SR-20 is neither larval death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

Wellmark International  
Bensenville, IL 60106

For information, call 1/800-XXX-XXXX

The information presented herein, while not guaranteed, is to the best of our knowledge true and accurate. No warranty or guarantee, express or implied, is made regarding the performance or stability of any product, since the manner of use and conditions of storage and handling are beyond our control.

## CHECKLIST

Things to remember when using A.L.L.

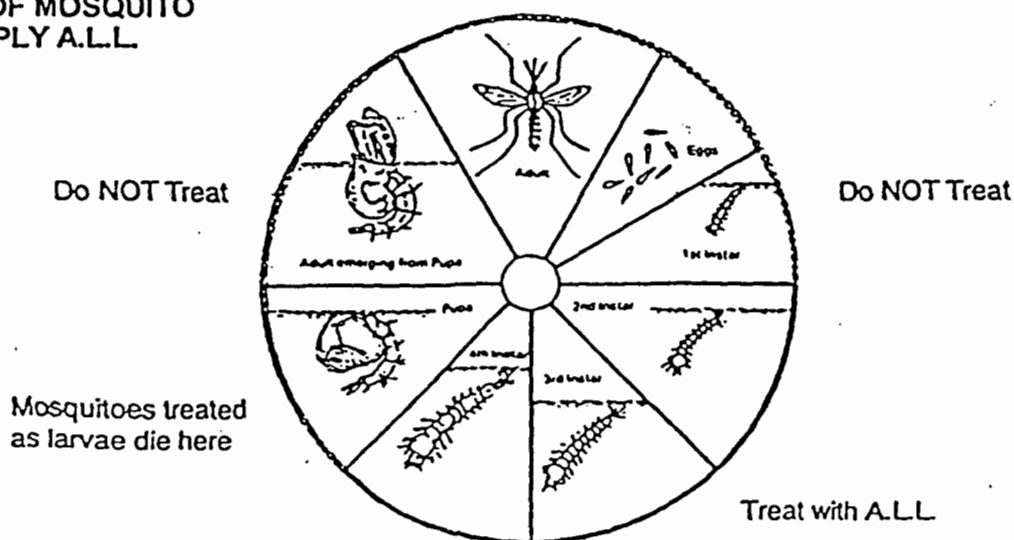
DO the following:

1. DO treat second, third, and/or fourth instar larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think A.L.L. has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with A.L.L. or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of A.L.L. can only be measured by lack of adult emergence.

## LIFE CYCLE OF MOSQUITO WHEN TO APPLY A.L.L.





## **Preparation of ALTOSAND® Granular Formulation**

### **An "On-Site" Method of Preparing a Granular Formulation of SR-20**

#### **INTRODUCTION**

A method of application of SR-20, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredient reaches the water where it is released from the sand.

ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of ten to thirteen pounds per acre.

#### **PREPARATION INSTRUCTIONS**

The following materials are required to prepare a 100 lb. batch of ALTOSAND:

- 99 lb washed, dry sand (20-45 mesh)
- 0.5 lb SR-20 (15 fluid oz/lb)
- 0.5 lb HiSil 233 (silicon dioxide)
- Small Funnel
- Cement Mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer, place 99 lb of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 lb (7.5 fl oz) of SR-20 onto the sand. (If better wetting is required, SR-20 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with SR-20 (usually 5 to 10 minutes).
4. Stop the mixer and add 0.5 lb of HiSil 233. Cover the mixer to reduce dust. Start the mixer and run for approximately 5 minutes. (The quantity of HiSil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture of the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in Step No. 1. Add more HiSil if it flows significantly slower and reduce the amount of HiSil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

#### **APPLICATION RATE AND METHODS**

Apply at a rate of 10 to 13 lb of the final mixture per acre, using standard granular dispersal equipment.

**Chemigation:** Apply this product only through flood (basin), furrow or border irrigation systems. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

**Flood (Basin), Furrow and Border Chemigation:** Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- \* The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- \* The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- \* The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- \* The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- \* The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where the pesticide distribution is adversely affected.
- \* Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

A pesticide supply tank is recommended for the application of SR-20 by chemigation.

ALTOSAND is a registered trademark of Wellmark International.

EPA Reg. No.: 2724-446



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

I, Roy Sjoblad, Branch Chief, Biochemical Pesticides Branch, Biopesticides and Pollution Prevention Division, Office of Prevention, Pesticide Toxic Substances certify that the pesticide product listed below is currently registered with the Agency under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, that the label attached is a true, and correct copy of the label accepted by the Agency, and that the product may be sold and marketed in the United States of America for the uses indicated on the label.

The product registration listed below has been issued to:

Wellmark International  
1000 Tower Lane, Suite 245  
Bensenville, Illinois 60106

EPA REGISTRATION NUMBER

Altosid Liquid Larvicide  
Zoecon RF-437 Mosquito Growth Regulator SR 20  
Zoecon RF-292 Briquets  
Zoecon RF-330 Altosid Pellets Mosquito Growth Regulator  
Zoecon 9010 GR

PRODUCT NAME

2724-392  
2724-446 ✓  
2724-421  
  
2724-448  
2724-451

IN WITNESS WHEREOF

I have hereunto set my hand  
and affixed the seal of the  
U.S. Environmental Protection  
Agency this *24th* day of *July*  
A.D. 1997

*Roy Sjoblad*  
\_\_\_\_\_  
Roy Sjoblad

CONCURRENCES

SYMBOL	DATE	SURNAME					
<i>7511W</i>	<i>7/22/97</i>	<i>Gregory</i>					
<i>7511W</i>	<i>7/22/97</i>	<i>Nelson</i>					
<i>7511W</i>	<i>7/24/97</i>	<i>Sjoblad</i>					



Vol 1 of 2  
Requested  
For CSF



# BPPD PRAT ACTION CODING FORM

PM 90: Janet Andersen

2724-392 ✓ *W. H. Lee*  
2724-446 ✓  
2724-421 ✓  
2724-448 ✓  
2724-451 ✓

REVIEWER: Don J. Lee

(ASSIGNED BY: \_\_\_\_\_)

EPA REG./FILE SYMBOL

ACTION CODE \_\_\_\_\_

SUBMISSION BARCODE \_\_\_\_\_

*Request for Certificate  
of registration*

Date on Application

7-7-97

EPA Received Date

7-9-97

PM Received Date

7-11-97

Assigned in PRAT YES \_\_\_\_\_

NO \_\_\_\_\_

Completed by: S. Diana Hudson

Date \_\_\_\_\_

.....

## FINAL ACTION

Response Code \_\_\_\_\_

Response Date: / /

MOS: \_\_\_\_\_ (1) Cite-All

\_\_\_\_\_ (4) Not Applicable

\_\_\_\_\_ (8) Selective

CRP:

Yes \_\_\_\_\_ No \_\_\_\_\_

Restricted Use:

Yes \_\_\_\_\_ No \_\_\_\_\_

Manufacturing Use:

Yes \_\_\_\_\_ No \_\_\_\_\_

Exclusive Use:

Yes \_\_\_\_\_ No \_\_\_\_\_



RECEIVED  
JUL 11 1997  
OPP/EPPO

Wellmark

July 7, 1997

Mr. Willie Nelson Team 80  
Document Processing Desk (CERT)  
Office of Pesticide Programs - H7504C  
U.S. Environmental Protection Agency  
401 M Street SW  
Washington, D.C. 20460-0001

Dear Mr. Nelson:

Our overseas affiliates are requesting verification of U.S. registration for the following products:

EPA Reg. No.

Altosid Liquid Larvicide  
Zoecon RF-437 Mosquito Growth Regulator SR-20  
Zoecon RF-292 Briquets  
Zoecon RF-330 Altosid Pellets Mosquito Growth Regulator  
Zoecon 9010 GR

2724-392  
2724-448  
2724-421  
2724-448  
2724-451

In order for us to complete the documentation, a certificate of registration letter bearing the EPA seal is needed from your office. We would greatly appreciate all of the above products being listed on one Gold Seal letter.

Because of continual requests for the same products, could you please provide us with six originals of this letter.

Please return the documents in the enclosed self addressed stamped envelope at your earliest convenience.

Thank you for your assistance in this matter and if you should have any questions, please contact me at 630/227-6016.

Sincerely,

WELLMARK INTERNATIONAL

*Kathleen McLean*

Kathleen McLean  
Regulatory Project Assistant

Enclosure



# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

Prevents Emergence of  
Adult Floodwater Mosquitoes

## ACTIVE INGREDIENT:

(S)-Methoprene (Isopropyl) (2E,6E,7E)-  
11-methoxy-3,7,11-trimethyl-2,4-

decadecanone

## INERT INGREDIENTS:

20%

80%

Contains 1.72 lb/gal (205.2 g/liter) active ingredient

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

See Back Panel For Additional Cautions

Because of the unique mode of action of A.L.L.<sup>TM</sup>  
Concentrate, successful use requires familiarity with  
special techniques recommended for application timing  
and treatment evaluation. See Guide to Product  
Application or consult local Mosquito Abatement Agency.

**NET CONTENTS:**

ACCEPTED  
with COMMENTS  
in EPA Letter Dated:

MAY 22 1990

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act as  
amended, for the pesticide  
registered under EPA Reg. No.

2724-446

## PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**Instructions for Use --** 1. **SHAKE WELL BEFORE USING.** Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution. 2. Do not mix with oil; use clean equipment. 3. Partially fill spray tank with water, then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable. 4. Spray solution should be used within 48 hours. Always agitate before spraying.

**RECOMMENDED APPLICATIONS --** Introduction: Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

**Methods of Application -- Aerial:** Use the recommended amount of Zoecon RF-379 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-379 in the appropriate volume of water to give the rate per acre recommended below.

**Application Rate:** Apply 1/4 to 1 fl.oz. of Zoecon RF-379 per acre (35 to 73 ai/hectare) in water as directed.

**Application Sites -- Pastures:** Zoecon RF-379 may be applied after each flooding without removal of grazing livestock.

**Rice:** Zoecon RF-379 must be applied to 2nd, 3rd and/or 4th instar larvae of mosquitoes found in rice, usually within 4 days after flooding. Use only where multiple flooding rice culture is practiced. Zoecon RF-379 treatment may be repeated with each flooding. Do not apply after rice reaches the heading stage of growth.

**Intermittently Flooded Noncrop Areas:** Zoecon RF-379 may be applied as directed above when flooding may result in floodwater mosquito hatch. Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions. Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level.

**Dense vegetation or swampy areas:** Apply a Zoecon RF-379 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**Mixing and Handling Instructions:** 1. Add measured amount of Zoecon RF-379 to spray tank partially filled with water, mix and complete filling with recommended quantity of water. 2. Use diluted spray solution within 48 hours of mixing. Agitate before each use.

**STORAGE & DISPOSAL:** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer to recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-  
U.S. Pat. 3,904,462; 3,912,815  
0189-A-0145E

EPA Est. 55947-CA-1  
© 1985 Zoecon  
Made in U.S.A.



## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-379, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-379 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides.

Zoecon RF-379 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-379 is applied to second, third or fourth instar larvae using standard spreading equipment in a manner similar to other larvicides.

Application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive.

Because the effect of Zoecon RF-379 is neither death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best-possible results with this unique product.

### CHECKLIST

Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

DO the following:

1. DO treat second, third and/or fourth larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults. observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
3. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae. After treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

## LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20



### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredients reach the water where they are released from the sand. ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100-pound batch of ALTOSAND:

- 99 lbs. washed, dry sand (20-45 mesh)
- 0.5 lbs. Zoecon RF-379, (7.5 fluid oz.)
- 0.5 lbs. Hissil 233 (silicon dioxide)
- Small funnel
- Cement mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer place 99 pounds of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 pound (7.5 fluid ounces) Zoecon RF-379, onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379, (usually five to ten minutes).
4. Stop the mixer and add 0.5 pound of Hissil 233. Cover the mixture to reduce dust. Start the mixer and run for approximately five minutes. (The quantity of Hissil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture on the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in step No. 1. Add more Hissil if it flows significantly slower and reduce the amount of Hissil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of eight to ten pounds of the final mixture per acre using standard granular dispersal equipment.



OCT 31 1996

Mr. Steven Spaulding  
Sandoz Agro, Inc.  
1300 E. Touhy Avenue  
Des Plaines, Illinois 60018

300/706824  
37/1

Dear Mr. Spaulding:

Subject: A.L.L. Concentrate  
EPA Reg. No. 2724-446  
Your submission between 1993-1996 in support of the  
removal of the fish habitat labeling precaution  
statement

The amendment referred to above, submitted in connection  
with registration under FIFRA sec. 3(c)(7)(A) requesting:

1. Removal of the statement "Do not use in fish-bearing  
waters", and

2. Modification of the labeling required statement "This  
product is toxic to aquatic invertebrates" to read, "This product  
is toxic to aquatic dipteran" **is acceptable provided that you:**

1. Submit and/or cite all data required for  
registration/reregistration of your product under FIFRA sec.  
3(c)(5) when the Agency requires all registrants of similar  
products to submit such data.

2. Submit five (5) copies of the corrected final printed  
labeling.

If these conditions are not complied with, the registration  
will be subject to cancellation in accordance with FIFRA sec.  
6(e). Your release for shipment of the product constitutes  
acceptance of these conditions

## CONCURRENCES

SYMBOL	750/W	750/W	750/W				
SURNAME	PHILLIPS	HULLER	McCHINTOCK				
DATE	10/29/96	10/29/96	10/30/96				



-2-

The data submitted under your submission of April 2, 1991 were assigned the following EPA MRID Number(s)

EPA MRID NUMBER(s) :TITLE OF REPORT(s)

440221-01

(S)-Methoprene Technical to  
Mysids (mysidopsis bahia)  
Under Flow-Through  
Conditions

440221-02

An Assessment of the Non-  
Target Effects of the  
Mosquito Larvicides, Bti and  
Methoprene, in Metropolitan  
Area Wetland

In future correspondence regarding these data, you should reference the assigned EPA MRID Numbers to facilitate our retrieval of these data. Please find a copy of the review attached to this letter for your records.

Sincerely,



Janet L. Andersen, Director  
Biopesticides and Pollution Prevention  
Division (7501W)

W Nelson: /10/29/30.308 8682.2724 392. Methoprene

CONCURRENCES

SYMBOL							
SURNAME							
DATE							



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OCT 31 1996

Mr. Steven Spaulding  
Sandoz Agro, Inc.  
1300 E. Touhy Avenue  
Des Plaines, Illinois 60018

Dear Mr. Spaulding:

Subject: A.L.L. Concentrate  
EPA Reg. No. 2724-446  
Your submission between 1993-1996 in support of the  
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statement

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labeling.

If these conditions are not complied with, the registration  
will be subject to cancellation in accordance with FIFRA sec.  
6(e). Your release for shipment of the product constitutes  
acceptance of these conditions

## CONCURRENCES

SYMBOL	7501W	7501W					
SURNAME	H. H. H. H.	Hutton					
DATE	10/29/96	10/29/96					



-2-

The data submitted under your submission of April 2, 1991 were assigned the following EPA MRID Number(s)

EPA MRID NUMBER(s):TITLE OF REPORT(s)

440221-01

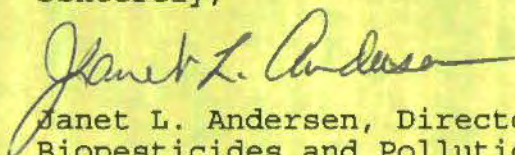
(S)-Methoprene Technical to  
Mysids (mysidopsis bahia)  
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440221-02

An Assessment of the Non-  
Target Effects of the  
Mosquito Larvicides, Bti and  
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Sincerely,



Janet L. Andersen, Director  
Biopesticides and Pollution Prevention  
Division (7501W)

W Nelson: /10/29/30:308-8682-2724-392: Methoprene

## CONCURRENCES

SYMBOL							
SURNAME							
DATE							



Mr. Steven Spaulding  
Sandoz Agro, Inc.  
1300 E. Touhy Avenue  
Des Plaines, Illinois 60018

Dear Mr. Spaulding:

Subject: Altosid Granules

EPA Reg. No. 2724-ULR, 2724-372, 2724-446

Your submission between 1993-1996 in support of the removal of the fish habitat labeling precaution statement 2724-42 2724-44

The amendment referred to above, submitted in connection with registration under FIFRA sec. 3(c)(7)(A) requesting:

1. Removal of the statement "Do not use in fish-bearing waters", and

2. Modification of the labeling required statement "This product is toxic to aquatic invertebrates" to read, "This product is toxic to aquatic dipteran" **is acceptable provided that you:**

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data.

2. Submit five (5) copies of the corrected final printed labeling.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions

## CONCURRENCES

SYMBOL	750/W	750/W	750/W				
SURNAME	Hutton	Hutton	McLINTOCK				
DATE	10/29/96	10/29/96	10/30/96				



-2-

The data submitted under your submission of April 2, 1991 were assigned the following EPA MRID Number(s)

EPA MRID NUMBER(s):TITLE OF REPORT(s)

440221-01

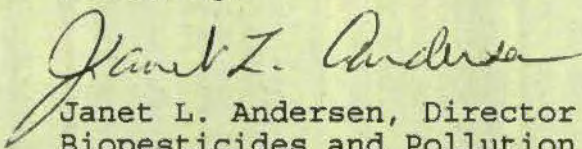
(S)-Methoprene Technical to  
Mysids (mysidopsis bahia)  
Under Flow-Through  
Conditions

440221-02

An Assessment of the Non-  
Target Effects of the  
Mosquito Larvicides, Bti and  
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Sincerely,



Janet L. Andersen, Director  
Biopesticides and Pollution Prevention  
Division (7501W)

W.Nelson / 10/29/30 308 8682 CONCURRENTS Methoprene							
SYMBOL							
SURNAME							
DATE							



**CORPORATE HEADQUARTERS**

TEL. 708.699.1616

Registration Division (7505W)  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
401 M Street, S.W.  
Washington, DC 20460

February 14, 1995

To: Ms. Janet Andersen, Director, BPPD

Re: Methoprene Aquatic Hazard Label Statements - Submission of alternate wording for Altosid® products

Thank you once again for meeting with us yesterday relative to Sandoz priorities. It was a pleasure meeting you and I will look forward to working with you in the future. In following up with your request for suggestions as to possible label statements for outdoor-use methoprene products - please consider the following. Two statements related to the use of Altosid products in aquatic environments are in question:

1) For fish:

The statement "*Do not apply to fish-bearing waters*" was placed on Altosid labels at a time when there was insufficient data available to evaluate the chronic risk to fish. Data have now been submitted and reviewed which support that this statement can be removed.

2) For Aquatic invertebrates:

The statement "*This product is toxic to aquatic invertebrates*" was requested following the 1982 methoprene registration standard. After discussions relative to the fact that the levels of active ingredient released into the environment using these products were not high enough to significantly affect non-target species - the statement was not enforced. Concerns were raised recently due to the fact that methoprene does indeed affect aquatic invertebrates (namely mosquito larvae and - to some degree midge larvae) - a warning statement has again been requested. Rather than the general statement above, Sandoz is proposing a more specific and correct alternative.

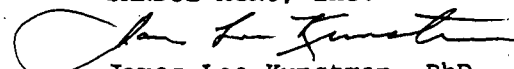
**ACTION:** To bring our Altosid labels up to date - Sandoz proposes the following label actions:

- 1) For Fish: remove current statement - no statement required
- 2) For Aquatic invertebrates: add the following statement to outdoor-use product labels:

*"This product is toxic to aquatic dipteran (mosquitoes) and chironomid (midges) larvae"*

Since this issue is our number one IGR priority at this time - we would like to resolve it by March 17 if possible, and would appreciate your quick action on this proposal. If you have any additional questions on these matters - please feel free to contact me at (708) 390-3664.

**SANDOZ AGRO, Inc.**

  
James Lee Kunstman, PhD.  
Registration Manager

6/2/95 WKL

**SANDOZ AGRO, INC.**

1300 EAST TOUHY AVENUE, DES PLAINES, ILLINOIS 60018-3300



**SANDOZ**

RECD EPA/OPP/DPD2

'96 MAY 28 A10:17

**CORPORATE HEADQUARTERS**

440221-00

TEL. 847.699.1616

Environmental Protection Agency  
Office of Pesticide Programs (H7505C)  
Document Processing Desk  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

May 23, 1996

Attn: Mr. Willie Nelson

Subject: Submission of S-Methoprene Reports in Support of Resolution of  
Aquatic Hazard Label Statements.

Products: Altosid Liquid Larvicide (A.L.L.) - EPA Reg. No. 2724-392 ✓  
A.L.L. Concentrate - EPA Reg. No. 2724-446  
Altosid Briquets - EPA Reg. No. 2724-375  
Altosid XR Briquets - EPA Reg. No. 2724-421 ✓  
Altosid Pellets - EPA Reg. No. 2724-448  
Altosid Granules - EPA Reg. No. 2724-ULR ✓

Please find enclosed 3 copies of the following reports in support of resolution of  
aquatic hazard label statements for the above referenced mosquito control  
products containing S-Methoprene:

1. (S)-Methoprene Technical - Chronic Toxicity to Mysids (*Mysidopsis bahia*)  
Under Flow-through Conditions. SLI Report #96-2-6378. Springborn  
Laboratories, Inc. April 2, 1996. *OK*
2. An Assessment of Non-Target Effects of the Mosquito Larvicides, Bti and  
Methoprene, in Metropolitan Area Wetlands. A Report from the Scientific  
Peer Review Panel to the Metropolitan Mosquito Control District (MMCD).  
January, 1996. *per required*
3. Methoprene (Altosid) Label Issues - Position Summary. Sandoz Agro, Inc.  
May, 1996.



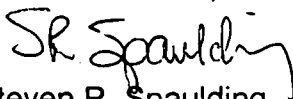
The Mysid Life-Cycle Toxicity Test was successfully completed after two previous studies were determined by EPA to be invalid due to poor population survival rates and poor reproduction success in the control groups. The Maximum-Acceptable-Toxicant Concentration (MATC) was calculated to be  $>14$  and  $<25\mu\text{g A.I./L}$ , which is similar to the values reported in the previous 2 invalid studies. This study has been repeated in response to your letter of July 20, 1994 in order to fulfill Guideline 72-4 requirements for an estuarine invertebrate chronic toxicity study.

The MMCD study evaluated potential effects of methoprene on non-target organisms after repeated use and failed to find any significant effects on birds, amphibians, zooplankton and most non-target insects.

The Methoprene Label Issues Position Summary provides rationale for our request to: (1) remove the warning statement "Do not apply to fish-bearing waters" from all solid Altosid mosquito control products and (2) add the statement "This product is toxic to aquatic dipteran (mosquitoes) and chironomid (midge) larvae" to all Altosid mosquito control products.

We would like to request a followup meeting with the BPPD following review of the submitted information in order to reach final resolution of this issue. Please contact me at (847)390-3007 if you have any questions.

Yours Sincerely,  
SANDOZ AGRO, Inc.

  
Steven R. Spaulding  
Sr. Regulatory Specialist

TRANSMITTAL DOCUMENT

SUBMITTED BY

Sandoz Agro Inc.  
1300 E. Touhy Ave.  
Des Plaines, Illinois 60018

REGULATORY ACTION IN SUPPORT OF WHICH THIS PACKAGE IS SUBMITTED

Submission of reports in support of resolution of label issues for Altosid mosquito control products.

TRANSMITTAL DATE

May 23, 1996

LIST OF SUBMITTED STUDIES

Volume 1 (S)-Methoprene Technical - Chronic Toxicity to Mysids (*Mysidopsis bahia*) Under Flow-through Conditions. SLI Report #96-2-6378. Springborn Laboratories, Inc. April 1996.

MRID No. 44022101

Volume 2 An Assessment of Non-Target Effects of the Mosquito Larvicides, Bti and Methoprene, in Metropolitan Area Wetlands. A Report from the Scientific Peer Review Panel to the Metropolitan Mosquito Control District. January, 1996.

MRID No. 44022102

Volume 3 Methoprene (Altosid) Label Issues - Position Summary. Sandoz Agro, Inc. May, 1996.

MRID No. 44022103

COMPANY OFFICIAL:

Steven R. Spaulding  
Senior Registration Specialist

SR Spaulding

COMPANY NAME:

SANDOZ AGRO, INC.

COMPANY CONTACT:

Steven R. Spaulding (847) 390-3007



**SANDOZ AGRO, INC.**  
1300 EAST TOUHY AVENUE, DES PLAINES, ILLINOIS 60018-3300

RECD EPA/GPP/DPD2

**SANDOZ**

96 MAY 28 AIO :17

440221-00

**CORPORATE HEADQUARTERS**

TEL. 847.699.1616

May 23, 1996

Environmental Protection Agency  
Office of Pesticide Programs (H7505C)  
Document Processing Desk  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

Attn: Mr. Willie Nelson

Subject: Submission of S-Methoprene Reports in Support of Resolution of  
Aquatic Hazard Label Statements.

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Steven R. Spaulding  
Senior Registration Specialist

*SR Spaulding*

COMPANY NAME:

SANDOZ AGRO, INC.

COMPANY CONTACT:

Steven R. Spaulding (847) 390-3007



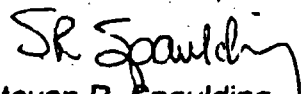
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Yours Sincerely,  
SANDOZ AGRO, Inc.



Steven R. Spaulding  
Sr. Regulatory Specialist



W NELSON

NO!

**CORPORATE HEADQUARTERS**

TEL. 708.699.1616

February 14, 1995

Registration Division (7505W)  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
401 M Street, S.W.  
Washington, DC 20460

To: Ms. Janet Andersen, Director, BPPD

Re: Methoprene Aquatic Hazard Label Statements - Submission of alternate wording for Altosid® products

Thank you once again for meeting with us yesterday relative to Sandoz priorities. It was a pleasure meeting you and I will look forward to working with you in the future. In following up with your request for suggestions as to possible label statements for outdoor-use methoprene products - please consider the following. Two statements related to the use of Altosid products in aquatic environments are in question:

1) For fish:

The statement "Do not apply to fish-bearing waters" was placed on Altosid labels at a time when there was insufficient data available to evaluate the chronic risk to fish. Data have now been submitted and reviewed which support that this statement can be removed.

2) For Aquatic invertebrates:

The statement "This product is toxic to aquatic invertebrates" was requested following the 1982 methoprene registration standard. After discussions relative to the fact that the levels of active ingredient released into the environment using these products were not high enough to significantly affect non-target species - the statement was not enforced. Concerns were raised recently due to the fact that methoprene does indeed affect aquatic invertebrates (namely mosquito larvae and - to some degree midge larvae) - a warning statement has again been requested. Rather than the general statement above, Sandoz is proposing a more specific and correct alternative.

**ACTION:** To bring our Altosid labels up to date - Sandoz proposes the following label actions:

- 1) For Fish: remove current statement - no statement required
- 2) For Aquatic invertebrates: add the following statement to outdoor-use product labels:

"This product is toxic to aquatic dipteran (mosquitoes) and Chironomid (midges) larvae"

Since this issue is our number one IGR priority at this time - we would like to resolve it by March 17 if possible, and would appreciate your quick action on this proposal. If you have any additional questions on these matters - please feel free to contact me at (708) 390-3664.

SANDOZ AGRO, Inc.

  
James Lee Kunstman, PhD.

Registration Manager

6/2/95 WLN





*W NELSON*

*NO 1*

**CORPORATE HEADQUARTERS**

TEL. 708.699.1616  
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Office of Pesticide Programs  
U.S. Environmental Protection Agency  
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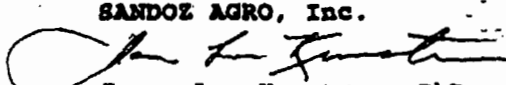
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SANDOZ AGRO, Inc.

  
James Lee Kunstman, PhD.  
Registration Manager

*6/2/95 WLN*



W NELSON

NO!

**CORPORATE HEADQUARTERS**

TEL. 708.699.1616

Registration Division (7505W)  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
401 M Street, S.W.  
Washington, DC 20460

February 14, 1995

To: Ms. Janet Andersen, Director, BPPD

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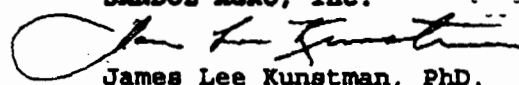
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SANDOZ AGRO, Inc.

  
James Lee Kunstman, PhD.  
Registration Manager

6/2/95 WLN



*Label to fish  
habitat filed  
(EPA Reg No. 2 -)  
with 10/23/96*

**SANDOZ****FAX****Regulatory Affairs, 1300 E. Touhy Ave., Des Plaines, IL 60018**

**To:** Mr. Willie Nelson  
**Tel:** (703) 308-8682  
**FAX:** (703) 308-7026

**cc:****File:** Altosid Label Issues

**From:** Steve Spaulding  
**Tel:** (847)-390-3007  
**FAX:** (847)-390-3487  
**Pages:** 4 (including cover page)

**Date:** October 21, 1996

If you do not receive all pages of this fax, please call (847)-390-3007 or 390-3672

Dear Mr. Nelson:

I spoke with Ada today and she indicated that she had discussed with you the status of the outside review of information submitted to resolve the ALTOSID aquatic invertebrate and fish-bearing water labeling statements. Evidently the outside review is complete and is back with the Agency in a secondary review stage. She indicated that it might be helpful to you if I sent you a copy of the document we submitted which outlines the label statements we are proposing. Therefore, I have attached pages 4 through 6 of the Position Summary for ALTOSID Label Issues that was submitted in May 96. Points 1 and 2 on page 6 reflect our labeling proposals.

Also, have you had a chance to check on the status of our March 96 New Product Submission for Methoprene/Chlorpyrifos Combination Collar for Dogs (RF 9413) - File Symbol 2724-UTR.

Please give me a call at (847) 390-3007 if you have any questions.

Best Regards,

*Steve Spaulding*



## Methoprene (Altosid) Label Issues - Position Summary

Sandoz Agro, Inc.

May 1996

**Issue:** Resolution of Environmental Hazard Warning Statements on Outdoor Use Mosquito Control Products Containing Methoprene.

Sandoz contends that the following warning statements are not justified on the labels for Altosid outdoor mosquito control products based on new data submitted between 1993-1996: (1) The warning statement "*Do not apply to fish-bearing waters*" should be removed from our labels and (2) The warning statement required by EPA "*This product is toxic to aquatic invertebrates*" should not be added to our labels.

**Products:** Altosid Liquid Larvicide (A.L.L.) - 2724-392  
A.L.L. Concentrate - 2724-446  
Altosid Briquets - 2724-375  
Altosid XR Briquets - 2724-421  
Altosid Pellets - 2724-448  
Altosid Granules - 2724-ULR (registration pending)

**Background:** Methoprene is the original biorational active ingredient registered by EPA and has been used for over 20 years without environmental incident. It is an insect growth regulator (IGR) and a structural analogue of insect juvenile hormone (JH). Methoprene is not a broad-spectrum insecticide but rather is used primarily for the control of fleas, mosquitoes and stored product pests.

The Methoprene Registration Standard was issued by EPA in 1982. At that time the statement "*Do not apply to fish-bearing waters*" was included on our labels because no data was available to evaluate the chronic risk to fish. Furthermore, EPA expressed concern at that time about the inherent toxicity of the active ingredient to aquatic invertebrates in laboratory studies. Discussions with EPA in 1982 and 1983 centered around arguments indicating that the end-use formulations would never produce concentrations in use which would be a hazard to fish or aquatic organisms. The toxicity to aquatic invertebrates appeared resolved at that time since EPA continued to register new product labels without the hazard statements. Work leading up to and issuance of the Methoprene Registration Eligibility Document (R.E.D.) in 1991 revisited this issue once again, and EPA required that the following statement be added to our outdoor use mosquito control products: "*This product is toxic to aquatic invertebrates*". Discussions continued and Sandoz and others began generating and submitting additional lab and field studies to quantitate the potential risk of Altosid products to non-target organisms.



**Current Situation:**

**Rate of Release of Methoprene Solid Formulations:** In 1993, Sandoz submitted a GLP study which quantitated and characterized the rate of release of various Altosid formulations (Table 1 & Figure 1). The rate of release study provided data about the actual levels of methoprene released into freshwater microcosms over 35 days. This provides for a realistic "worse case" estimate of 2.6 ppb as the Effective Environmental Concentration (EEC) and thus allows a more accurate calculation of exposure toxicity potential of methoprene products to non-target organisms. An EEC of 2.6 ppb based on actual measurements of methoprene in aquatic microcosms is more appropriate than EPA-calculated values ranging from 0.8-540 ppb which were cited in an EPA Memorandum from A. Maciorowski to P. Hutton dated 6 Jan 95.

**Exposure Toxicity and Risk for Freshwater Fish:** In 1993 and 1994, Sandoz submitted GLP freshwater fish data. Q-values ( $Q = \text{EEC}/\text{LC50}$  or LEL or NOEL) derived from these studies indicated that these Altosid formulations posed minimal acute and chronic risks to fish (Tables 1 & 2). These data triggered no further studies. Based upon these studies, Sandoz contends that the statement "Do not use in fish-bearing waters" is no longer warranted on Altosid outdoor use mosquito control products. These studies were favorably discussed in a June 1994 meeting with EPA.

**Exposure Toxicity and Risk to Freshwater Invertebrates:** Acute and chronic toxicity GLP studies for *Daphnia magna* were submitted in 1994 (Tables 1 and 2) and based upon Q-values derived from these studies it is concluded that there is minimal acute and chronic risk to freshwater aquatic invertebrates from exposure to Altosid formulations. These data triggered no further studies.

**Exposure Toxicity and Risk to Estuarine Species:** One acute and two chronic GLP Mysid Shrimp toxicity studies were submitted in 1993 (Table 1). The acute study indicated that there was no acute risk to estuarine species (Table 2). The two chronic studies were considered to be invalid by EPA due to poor population survival rates and poor reproductive success in the control groups. This study has been successfully repeated in response to an Agency letter dated July 20, 1994 and submitted in May 1996 to fulfill Guideline 72-4 requirements for an estuarine invertebrate chronic toxicity study (Table 1). Based upon Q-values calculated from this study, it is concluded that there is minimal chronic risk to estuarine species from exposure to Altosid formulations (Table 2).

**Conclusion:** Considerable high quality GLP aquatic toxicity data has been submitted to the Agency between 1993 and 1996 which indicates minimal acute and chronic risk to freshwater fish, freshwater invertebrates and estuarine species from exposure to Altosid mosquito control products. Rate of release data




of Altosid formulations under laboratory and field conditions indicate that exposure to methoprene will not reach levels which are toxic to aquatic non-target species either after acute or chronic exposure. This is supported by a long-term study sponsored by the Metropolitan Mosquito Control District (MMCD) submitted to the Agency in May 1996 which evaluated the potential effects of Methoprene on non-target organisms. The study failed to find any significant effects on birds, amphibians, zooplankton and most non-target insects. Densities of some aquatic insects, particularly chironomids, were reduced by methoprene applications. Methoprene degrades rapidly when applied to water or sediment which further reduces the exposure potential.

These issues were discussed in a meeting between Sandoz and the BPPD in February 1995 and final resolution of aquatic hazard labeling was dependent upon submission of a scientifically valid chronic Mysid Shrimp study to satisfy Guideline 72-4 requirements. This study was submitted in May 1996 and indicated minimal chronic risk to estuarine species. In conclusion, based upon the data submitted between 1993 and 1996, Sandoz proposes the following actions to resolve the long-outstanding aquatic hazard warning label issue:

1. Remove the requirement for the statement "*Do not use in fish-bearing waters*", and
2. Modify the EPA requirement to add "*This product is toxic to aquatic invertebrates*". Based upon the February 1995 meeting, BPPD seemed in favor of modifying the aquatic invertebrate statement. Therefore, Sandoz proposes to add the following more accurate statement to all solid Altosid mosquito control product labels. "*This product is toxic to aquatic dipteran (mosquitoes) and chironomid (midge) larvae.*"



(A) 	United States Environmental Protection Agency Office of Pesticide Programs (H7505C) Washington, DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number  <b>200521</b>
	Application for Pesticide:		

## Section I

1. Company/Product Number 2724-446 <i>Nelson</i>	2. EPA Product Manager Phil Hutton	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Zoecon RF-437 Mosquito Growth Regulator	PM# 90	
5. Name and Address of Applicant (Include ZIP Code) Sandoz Agro, Inc. 1300 E. Touhy Ave. Des Plaines, IL 60018  <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:  EPA Reg. No. _____ Product Name _____	

## Section II

<input type="checkbox"/> Amendment - Explain below	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - explain below.

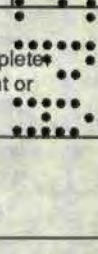
Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Notification of Alternate Brand Name: Zodiac Fleatrol Yard Spray Concentrate

## Section III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input checked="" type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____	
* Certification must be submitted.		If "Yes," Unit Package wgt.	No. per container	If "Yes," Package wgt.	No. per container
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) of Retail Container 0.75 oz. - 55 gal.		5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner In Which Label Is Affixed To Product <input checked="" type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled		<input type="checkbox"/> Other (_____)			

## Section IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)					
Name Steven R. Spaulding		Title Sr. Registration Specialist		Telephone No. (Include Area Code) (708) 390-3007	
<b>Certification</b> I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.					
2. Signature <i>SR Spaulding</i>		3. Title Sr. Registration Specialist		6. Date Application Received (Stamped)  	
4. Typed Name Steven R. Spaulding		5. Date May 16, 1995			



## PAPERWORK REDUCTION ACT NOTICE and INSTRUCTIONS

**PAPERWORK REDUCTION ACT NOTICE:** Public reporting burden for this collection of information is estimated to average 0.85 hour per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

**INSTRUCTIONS:** This form is to be used for all applications for new registration, end use reregistration, amendment, resubmission, to applications for notifications, final printed labeling, reregistration, etc. In order to process an application for a new registration submitted on this form, the following material must accompany the application:

1. Certification with Respect to Citation of Data (EPA Form 8570-29). If not exempted by 40 CFR 152.81 (b) (4);
2. Confidential Statement of Formula (EPA Form 8570-4);
3. Formulator's Exemption Statement (EPA Form 8570-27);
4. Five copies of draft labeling;
5. Three copies of any data submitted;
6. Authorization letter where applicable;
7. Matrices where applicable.

**Submission of Labeling** - Labeling should first be submitted in the form of draft labels with all applications for new registration. Such draft labels may be in the form of typed label text on 8.5 x 11 inch paper or a mockup of the proposed label. If prepared as a mockup, it should be constructed in such a way as to facilitate storage in an 8.5 x 11 inch file. Mockup labels significantly smaller than 8.5 x 11 inches should be mounted on 8.5 x 11 inch paper for submission.

**Submission of Data** - Data submitted in support of this application must be submitted in accordance with PR Notice 86-5.

**SPECIFIC INSTRUCTIONS:** Please read the instructions listed below before completing this application. First determine the type of registration action, listed in Block A, for which you are submitting this application. For applications submitted in connection with New Registration actions, Sections I, III, and IV must be completed by the applicant. For applications submitted in connection with amended registration actions, resubmissions, notifications, reregistrations, etc., Sections I, II, and IV must be completed by the applicant.

**Block A** - Check the appropriate action for which you are submitting this form.

**SECTION I** - This section must be completed, as applicable, for all registration actions.

1. **Company/Product Number** - Insert your Company Number, if one has been assigned by EPA. This number may have been assigned to you as a basic registrant, a distributor, or as an establishment. If your product is registered, insert the Product Number.
2. **EPA Product Manager** - If known, fill in the name and PM number of the EPA Product Manager.
3. **Proposed Classification** - Specify the proposed classification of this product.
4. **Product Name** - Enter the complete product name of this pesticide as it will appear on the label. The name must be specific to this product only. Duplication of names is not permitted among products of the same company. Do not include any brand name or company line designations.
5. **Name and Address of Applicant** - The name of the firm or person and address shown in your application is the person or firm to whom the registration will be issued. If you are acting in behalf of another party, you must submit authorization from that party to act for them in registration matters. An applicant not residing in the United States must have an authorized agent residing in the United States to act for them in all registration matters. The name and complete mailing address of such an agent must accompany this application.
6. **Expedited Review** - FIFRA section 3 (c) 3 (B) provides for expedited review of applications for registration, or amendments to existing registrations, that are similar or identical to other pesticide products that are currently registered with the EPA. In order for your application to be eligible for expedited review, you must provide us with the EPA Registration Number and product name of the product you believe is similar to or identical to your product. The product must be similar or identical in both formulation and labeled uses.

**SECTION II** - This section must be completed for all applications submitted to amend the registration only of a currently registered product (Amendment), for a resubmission in response to an Agency letter, for notifications to the Agency, for the submission of final printed labeling, for reregistration and for any other action that pertains to a specific EPA-registered product. This section is not to be used for a new application for registration.

1. **Subject of submission** - Check the applicable block and provide the Agency letter date if appropriate. Provide a brief explanation of the purpose(s) for the submission, such as "the addition of a site, pest or crop (specify)"; "amend the Confidential Statement of Formula by..."; "reregistration submission"; general label revision of use directions." Attach a separate page if additional space is needed.

**SECTION III (Packaging and Container Information)** - This Section must be completed for all applications submitted in connection with new registration or applicable amendments.

1. **Type of Packaging** - Check the appropriate block if your product will be packaged in the indicated packaging types. Indicate the size of the individual packets and number per retail container.
2. **Type of Retail Container** - Indicate type of container in which product will be marketed.
3. **Location of Net Contents** - Specify the net contents of all retail containers for your product.
4. **Size(s) of Retail Container** - Specify the net contents of all retail containers for your product.
5. **Location of Use Directions** - Indicate the location of the use directions for your product.
6. **Manner in which label is affixed to product** - Indicate the method product label is attached to retail container.

**SECTION IV (Contact Point)** - This Section must be completed for all applications for Registration actions, i.e., new products registration, resubmission, "me-too," reregistration, etc.

- 1-5. Self-explanatory.
6. EPA Use Only.



**CORPORATE HEADQUARTERS**

TEL. 708.699.1616

Document Processing Desk (NOTIF)  
Office of Pesticide Programs - H7504C  
U.S. Environmental Protection Agency  
401 M Street SW  
Washington D.C. 20460-0001

May 16, 1995

Attn: Mr. Phil Hutton (PM 18)

**RE: Zoecon RF-437 Mosquito Growth Regulator  
(EPA Reg. No. 2724-446)  
Notification of Additional Brand Name**

Dear Mr. Hutton:

This correspondence is to notify the Agency of the following additional brand name related to the above-referenced product:

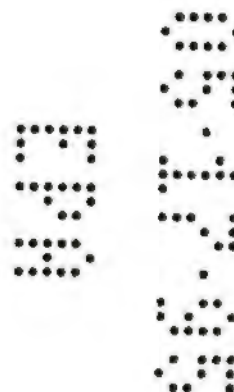
1. ZODIAC® Fleatrol® Yard Spray Concentrate.

Please contact me at (708) 390-3007 if you have any questions.

Yours Sincerely,  
SANDOZ AGRO, Inc.

*SR Spaulding*

Steven R. Spaulding  
Sr. Regulatory Specialist



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JAN 25 1994

345  
13 | 1

Dr. James Lee Kuntsman  
Sandoz Agro, Inc.  
1300 E. Toughy Avenue  
Des Plaines, Illinois 60018-3300

Dear Dr. Kuntsman:

Subject: Unidentified Inert Ingredient (Altosid Liquid Larvicide Concentrate)  
EPA Reg. No.: 2724-446

A recent review of our records for the above product showed that we do not have information on the proprietary inert:

[REDACTED] We need the chemical identity, the CAS No. and other information relative the identity of this compound. The Agency must be provided with the identity of this chemical, so that we can accurately record the records of this product into our computer system and complete our records for this product. If Sandoz can not provide adequate information to identify this product; then, a suitable substitute for the inert must be provided, and a new Confidential Statement of Formula submitted to the Agency.

We would appreciate it if Sandoz would address this issue as soon as possible. Should you have any questions on this subject, please feel free to contact Mr. Willie H. Nelson of my staff at (703) 308 8682.

Sincerely,

*Janet L. Andersen*  
Janet L. Andersen, Acting Director  
Biopesticides and Pollution Prevention  
Division (7501W)

Wnelson:01/22/95:2724-446:methoprene

## CONCURRENCES

SYMBOL	7501W						
SURNAME	Nelson						
DATE	1/24/95						



Return of Inert Code Request Form to PM 18

The attached request for a PC code from Daria Mills was received by RSB. We have no information on the proprietary inert mixture in question. Therefore, we are returning it to you so that you may communicate with the registrant and obtain the needed information. If the proprietary inert mixture contains an inert not currently on our list of inert ingredients, it will have to be processed by PM Team 45, and the formulation cannot be approved until that is complete. If Daria Mills attempted to encode this formulation in error, that is if you had not approved this formulation, but were waiting for additional information on the inert mixture, please let her know. We are trying to track down why we get so many of these requests for codes for unknown proprietary inert mixtures.

Thank you very much for your help. We would be happy to assist you in any way to improve this process.

Tina Levine

cc. Daria Mills



# CHEMICAL NAME/PESTICIDE CHEMICAL CODE (PCC) REQUEST FORM\*

CR#: 94-0538

REQUESTOR NAME: Daria Mills REQUEST DATE: 10/25/94  
TEL: ( ) 305-7406 ORG.: PMSD/ISB ROOM: 216 MAIL CODE: H-7502C  
(DIV./BR./SEC.)

**CSF ATTACHED:**

- ☐ YES If CSF is attached complete Item A and the chemical name in Item B.  
☐ NO If CSF is not attached complete Items A through C.

**A. INFORMATION REQUIRED:**

☒ Check Applicable Category

- ☐ Provide PCC and Tolerance Exemption Status For Food-Use Inert Ingredient(s)  
☐ Provide PCC for Non-Food Use Inert Ingredient (s)  
☐ Provide PCC for Active Ingredient(s)  
☐ Provide PCC for Dye  
☐ Determine if Fragrance is Acceptable for Use in Formulation  
☒ Other (Describe): Please provide inert code to update the product in PPIS

**B. INGREDIENT INFORMATION:**

<p><b>Ingredient No. 1:</b></p> <p>Chem. Name: <span style="background-color: black; color: black;">[REDACTED]</span></p> <p>Trade Name: _____</p> <p>CAS Reg. No.: <span style="background-color: black; color: black;">[REDACTED]</span></p>	<p><b>Ingredient No. 2:</b></p> <p>Chem. Name: _____</p> <p>Trade Name: _____</p> <p>CAS Reg. No.: _____</p>
<p><b>Ingredient No. 3:</b></p> <p>Chem. Name: _____</p> <p>Trade Name: _____</p> <p>CAS Reg. No.: _____</p>	<p><b>Ingredient No. 4:</b></p> <p>Chem. Name: _____</p> <p>Trade Name: _____</p> <p>CAS Reg. No.: _____</p>

**C. PESTICIDE PRODUCT INFORMATION:**

EPA Reg. No./File Symbol: 2724-4446 Product Name: Zoecon RF-437 Mosquito Growth Regulator  
Registrant: Zoecon Corporation Food-Use Pesticide: ☐ YES ☐ NO SR-20  
Percent in Formulation (For Fragrance/Dyes only): \_\_\_\_\_

**INFORMATION REPORTED:**

<p><b>Ingredient No. 1:</b></p> <p>PCC: <u>No code is available</u></p> <p>TOL STATUS: _____</p> <p>OTHER INF.: _____</p>	<p><b>Ingredient No. 2:</b></p> <p>PCC: _____</p> <p>TOL STATUS: _____</p> <p>OTHER INF.: _____</p>
<p><b>Ingredient No. 3:</b></p> <p>PCC: _____</p> <p>TOL STATUS: _____</p> <p>OTHER INF.: _____</p>	<p><b>Ingredient No. 4:</b></p> <p>PCC: _____</p> <p>TOL STATUS: _____</p> <p>OTHER INF.: _____</p>

Completed By: LINDA FAN Date Completed: 10/26/94



PM # - 18  
REG # - 2724-446  
DATA ANALYST - NB.  
DATE PROCESSED - 10/31/94

THIS JACKET HAS BEEN FOUND TO BE DEFICIENT BY SIG FOR THE FOLLOWING REASONS:

1. CURRENT ACCEPTED LABEL NOT STAMPED
2. CURRENT LABEL MISSING
3. CURRENT CSF MISSING
4. ACTIVE AND INERTS DO NOT = 100%
5. ADDITIONAL BRAND NAME (NO CODING REQ'D)
6. CURRENT INFORMATION ON FILE IS CORRECT (NO CHG REQ'D)
7. CSF/LABEL/JACKET INFO. IS INCONSISTENT
8. SAME REG-NR ASSIGNED TO 2 PMS OR PRODUCTS
9. REG-NR IS OR NEEDS TO BE CANCELLED AND/OR TRANSFERRED.
10. IN CSF, REG-NR IS CANCELLED - NEED NEW REG. NR. FOR -
11. SITE/PEST INFO. MISSING FROM LABEL
12. RETURNED UNPROCESSED PER PM TEAM MEMBER REQUEST
13. NO SIGNAL WORD
14. NO ACTIVE/INERT PERCENTAGES ON LABEL
15. OTHER - NO code is available for the inert ingredient -  
Please see the attached forms.

PLEASE RESUBMIT THE ABOVE JACKET/S WHEN THE ABOVE DEFICIENCY/CIES HAVE BEEN CORRECTED TO:

SIG  
ROOM 253  
305-5175

YOUR COOPERATION IN RESOLVING THE DEFICIENCY/CIES IS GREATLY APPRECIATED.

\*Inert ingredient information may be entitled to confidential treatment\*



# REGISTRATION JACKET INTRA-TRANSFER REQUEST

(PLEASE FILL OUT FORM COMPLETELY)

TRANSFER FILE TO: Phil Hutton PM-18 PHONE: 305-7690

REASON FOR TRANSFER: ☐ RSB CHEMISTRY REVIEW ☐ CODING (SIG)  
☐ ACTION COMPLETED ☐ PRECAUTIONARY LABEL REVIEW  
☐ WITHDRAW PENDING APPLICATION  
☐ OTHER \_\_\_\_\_

TRANSFERRED FROM: SIG PHONE: 305-5175

DATE OF REQUEST: 10/31/94 PM TEAM: N/A  
 (IF APPLICABLE)

## REGISTRATION NUMBER(S) OF JACKET(S) TO BE TRANSFERRED

(PLEASE INDICATE VOLUME NUMBER, IF APPLICABLE)

REGISTRATION#	COMMENTS	LOCATION	OTHER INFORMATION
<u>2724 - 446</u>	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

SPECIAL COMMENTS:

FOR FILE ROOM STAFF USE

NOTIFY REQUESTOR:

OCT 31 94  
DATE

10:10  
TIME

ERH  
INITIALS

**Hutton PM-18**



SEP 21 1994

James Lee Kuntsman, PH. D.  
Registration Manager  
Sandoz Agro, Inc.  
1300 East Touhy Avenue  
Des Plaines, Illinois 60018-3300

Dear Dr. Kunstman:

Subject: Altosid Liquid Larvicide Concentrate  
EPA Reg. No. 2724-446  
Your submission of July 15, 1994

The amendment referred to above requesting an approval to add use sites and fleas to the label submitted in connection with registration under FIFRA Section 3(c)(5) is acceptable provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data.

2. Submit five (5) copies of your final printed labeling before you release the product for shipment, if there is any labeling change.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

Sincerely yours,

*Phil Hutton*  
Phil Hutton, PM-18  
Insecticide Rodenticide Branch  
Registration Division (7505C)

## CONCURRENCES

SYMBOL							
SURNAME							
DATE							



EPA REGISTRATION NO.  
2724-446

DATE OF ISSUANCE  
MAY 22 1990

TERM OF ISSUANCE

NOTICE OF PESTICIDE: ☐ REGISTRATION  
☐ REREGISTRATION  
(Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended)

NAME OF PESTICIDE PRODUCT

Zoecon RF-379 Mosquito  
Growth Regulator SR-20

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, Texas 75234



NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)C provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data.
2. Add the phrase "EPA Registration No. 2724-446" to your label before you release the product for shipment.
3. Change the front panel statement from "Because of the unique mode of action of A.L.L. Concentrate, ..." to read as follows:

"Because of the unique mode of action of Zoecon RF-379 Mosquito Growth Regulator SR-20, ..."

☐ ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL

See P. 2

DATE

5/22/90



NOTICE  
OF  
CONDITIONAL  
REGISTRATION



- 2 -

4. Submit five (5) copies of your final printed labeling before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely,



Phil Hutton  
Product Manager (17)  
Insecticide/Rodenticide Branch  
Registration Division (H7505C)

Enclosure



# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

Prevents Emergence of  
Adult Floodwater Mosquitoes

## ACTIVE INGREDIENT:

(S)-Methoprene [Isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-

dodecadienoate]..... 20%  
INERT INGREDIENTS:..... 80%

Contains 1.72 lb/gal (205.2 g/liter) active ingredient

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

See Back Panel For Additional Cautions

Because of the unique mode of action of A.L.L.<sup>TM</sup>  
Concentrate, successful use requires familiarity with  
special techniques recommended for application timing  
and treatment evaluation. See Guide to Product  
Application or consult local Mosquito Abatement Agency.

## NET CONTENTS:

ACCEPTED  
with COMMENTS  
in EPA Letter Dated:

MAY 22 1990

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act as  
amended, for the pesticide  
registered under EPA Reg. No.

2724-446

## PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Instructions for Use -- 1. **SHAKE WELL BEFORE USING.** Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution. 2. Do not mix with oil; use clean equipment. 3. Partially fill spray tank with water, then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable. 4. Spray solution should be used within 48 hours. Always agitate before spraying.

**RECOMMENDED APPLICATIONS -- Introduction:** Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

**Methods of Application -- Aerial:** Use the recommended amount of Zoecon RF-379 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-379 in the appropriate volume of water to give the rate per acre recommended below.

**Application Rate:** Apply 3/4 to 1 fl.oz. of Zoecon RF-379 per acre (55 to 73 ml/hectare) in water as directed.

**Application Sites -- Pastures:** Zoecon RF-379 may be applied after each flooding without removal of grazing livestock.

**Rice:** Zoecon RF-379 must be applied to 2nd, 3rd and/or 4th instar larvae of mosquitoes found in rice, usually within 4 days after flooding. Use only where multiple flooding rice culture is practiced. Zoecon RF-379 treatment may be repeated with each flooding. Do not apply after rice reaches the heading stage of growth.

**Intermittently Flooded Noncrop Areas:** Zoecon RF-379 may be applied as directed above when flooding may result in floodwater mosquito hatch. Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions. Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-379 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**Mixing and Handling Instructions:** 1. Add measured amount of Zoecon RF-379 to spray tank partially filled with water, mix and complete filling with recommended quantity of water. 2. Use diluted spray solution within 48 hours of mixing. Agitate before each use.

**STORAGE & DISPOSAL:** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer to recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-  
U.S. Pats. 3,904,662; 3,912,815  
0189-A:0145E

EPA Est 55947-CA-1  
c 1985 Zoecon  
Made in U.S.A. **60**



## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-379, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-379 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides.

Zoecon RF-379 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-379 is applied to second, third or fourth instar larvae using standard spraying equipment in a manner similar to other larvicides.

After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive.

Because the effect of Zoecon RF-379 is neither death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

### CHECKLIST

Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

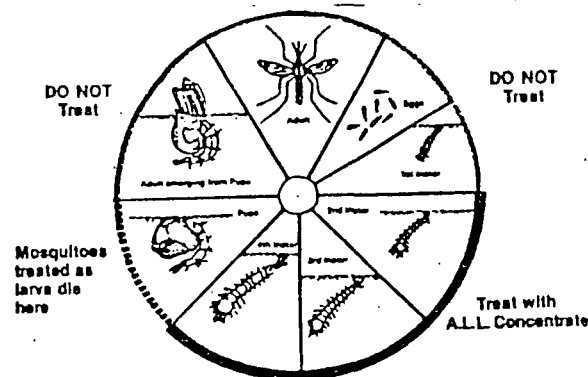
DO the following:

1. DO treat second, third and/or fourth larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

## LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20



### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredients reach the water where they are released from the sand. ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100-pound batch of ALTOSAND:

- 99 lbs. washed, dry sand (20-45 mesh)
- 0.5 lbs. Zoecon RF-379, (7.5 fluid oz.)
- 0.5 lbs. Hissil 233 (silicon dioxide)
- Small funnel
- Cement mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer place 99 pounds of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 pound (7.5 fluid ounces) Zoecon RF-379, onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379, (usually five to ten minutes).
4. Stop the mixer and add 0.5 pound of Hissil 233. Cover the mixture to reduce dust. Start the mixer and run for approximately five minutes. (The quantity of Hissil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture on the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in step No. 1. Add more Hissil if it flows significantly slower and reduce the amount of Hissil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of eight to ten pounds of the final mixture per acre using standard granular dispersal equipment.

-446 RED  
-446 Gov'n

**Zoecon Corporation**

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

11 May 1992

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

RE: Response to Agency Letter Dated 4/10/92 Regarding Zoecon Submission of  
11/25/91 - 6(a)(2) .  
Labeling Changes Dealing with Positive Dermal Sensitization Results

Dear Mr. Nelson:

We received a letter signed by Stephanie Irene for Anne Lindsay stating that a 6(a)(2) report was submitted for 16 registrations: 2724-441, 2724-401, 2724-446, 2724-352, 2724-286, 2724-360, 2724-392, 2724-404, 2724-372, 55947-88, 2724-421, 2724-373, 2724-448, 2724-339, 2724-377, 2724-420. Since Zoecon did submit a 6(a)(2) report based on tox data conducted under the methoprene RED, we're submitting a response to this letter to you.

Our report dated 11/25/91 only covered 5 registrations; i.e., 2724-286, 2724-360, 2724-393, 2724-446, 55947-88. And 4 of those registrations; i.e., 2724-286, 2724-393, 2724-446 and 55947-88 (transferred to 2724-452, effective 11/18/91) had positive dermal sensitization results (2724-360 had dermal irritation results). Therefore, Zoecon agrees to add the statement "Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals" to those 4 registrations. Since we are expecting reviews of all data/labeling submitted in November, we will incorporate these labeling changes with any other changes necessary from review of the methoprene RED data.

Best regards,




Kelly J. Parker  
Regulatory Specialist  
800/527-0512



Phil -

This side is strictly RED info. During the RED process, we decided to separate RED info from normal (?) correspondence. Some of it may be duplicate. I remembered to copy this at the last minute so I haven't put it in with the other info -

Sorry! Kelly

(A) 	United States Environmental Protection Agency Office of Pesticide Programs (H7505C) Washington, DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number  155774
	Application for Pesticide:		

## Section I

1. Company/Product Number 2724-286	2. EPA Product Manager Willie Nelson	3. Proposed Classification  <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Zoecon RF-174 Flea Growth Regulator	PM# RD-0030	
5. Name and Address of Applicant (Include ZIP Code) Zoecon Corporation A Sandoz Company 12200 Denton Drive Dallas, TX 75234 <input type="checkbox"/> Check if this is a new address	6. <b>Expedited Review.</b> In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:  EPA Reg. No. _____ Product Name _____	

## Section II

<input type="checkbox"/> Amendment - Explain below	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input type="checkbox"/> Notification - Explain below.	<input checked="" type="checkbox"/> Other - explain below.

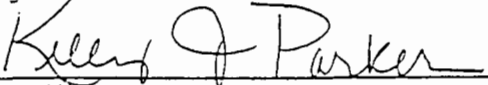
Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Response to Agency Letter 4/10/92.

## Section III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Metal	
				<input checked="" type="checkbox"/> Plastic	
				<input checked="" type="checkbox"/> Glass	
				<input type="checkbox"/> Paper	
				<input type="checkbox"/> Other (Specify) _____	
* Certification must be submitted.		If "Yes," Unit Package wgt.	No. per container	If "Yes," Package wgt.	No. per container
		100 @ 3ml		each	
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) of Retail Container 3 ml (100/box) to 1/2 pint		5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label Is Affixed To Product		<input type="checkbox"/> Lithograph <input checked="" type="checkbox"/> Paper glued <input checked="" type="checkbox"/> Stenciled <input type="checkbox"/> Other (_____)			

## Section IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)					
Name Kelly J. Parker		Title Regulatory Specialist		Telephone No. (Include Area Code) 214/888-8726	
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.					6. Date Application Received (Stamped)
2. Signature 		3. Title Regulatory Specialist			
4. Typed Name Kelly J. Parker		5. Date 11 May 1992			





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



JAN 21 1992

OFFICE OF  
PESTICIDES AND TOXIC  
SUBSTANCES

Ms. Kelly Parker  
Regulatory Specialist  
Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, TX 75234

Dear Ms. Parker:

Subject: Request for an Extension for Storage Stability Data  
To Be Submitted to the Agency and Product Chemistry  
Guideline 151B-17(1)  
(See the enclosed list of products covered)  
Your Submission Dated July 1, 1991

This letter is in response to your letter of the above date submitted in support of the subject products. Under Section 4 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended in 1988, which requires that the Agency reregister pesticides that were first registered before November 1, 1984. Pursuant to this Act, and your response to RED issued under the Provisions of this Act, we have reviewed your submission(s)/request(s) and our conclusions are as follows:

- Your request for an extension of time to complete a 1 year storage stability study is unnecessary, since the Agency has established a policy in December 1991 to treat this data requirement much as it treats efficacy data requirements. The study is to be done and maintained in the registrants' files, but not submitted to the Agency unless the Agency specifically calls for the study at some future time.



### Product Chemistry Data Requirements

The following studies are not required for the products listed in the attachment; these studies are needed only for the Technical Grade of the Active Ingredient which have been received by the Agency.

- ° Solubility
- ° Melting Point
- ° Discussion of Formation of Impurities
- ° Boiling Point
- ° Octanol/Water Partition Coefficient
- ° Stability
- ° Analysis of Samples
- ° Vapor Pressure.

Miscibility-Data are required only if the emulsifiable liquid is intended to be diluted with petroleum solvents, but these products are not intended to be used with petroleum solvent; therefore, the data are not required.

Your request to amend your labeling to include the statement, "Breaks the flea life cycle," submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable, and a stamped copy is enclosed for your records. This stamped label does not constitute reregistration. The RED requirements are yet to be satisfied for that purpose.



Also, the Agency has no objection to the use of the Alternate Trademark "VIGREN" for your private labels instead of PRECOR which will be the trademark for your general product labelings.

Should you need further assistance, please contact Mr(s). Phil Hutton or Willie Nelson, PM Team 18, at (703) 305-6601.

Sincerely,

*Anne E. Lindsay*

Anne E. Lindsay, Director  
Registration Division  
Office of Pesticide Program

STATUS OF METHOPRENE STANDARD

1. Request for a Waiver of Product Performance Data: 7/7/91

Case Number and Name: 0030 Methoprene

EPA REG. NO.'s

2724 - 375  
2724 - 392  
2724 - 393  
2724 - 446  
2724 - 448  
2724 - 421  
2724 - 286  
2724 - 337  
2724 - 338  
2724 - 339  
2724 - 352  
2724 - 356  
2724 - 360  
2724 - 367  
2724 - 368  
2724 - 372  
2724 - 373  
2724 - 373  
2724 - 377  
2724 - 384  
2724 - 401  
2724 - 404  
2724 - 420  
2724 - 427  
2724 - 441  
2724 - 442



ZOECON CORPORATION  
A SANDOZ COMPANY  
12200 DENTON DRIVE  
DALLAS, TEXAS 75234

UNATTENDED FAX #: 214/888-8524  
MAIN PHONE #: 214/243-2321  
TOLL FREE #: 800/527-0512  
DIRECT #: 214/888-8726  
TELEX #: 730775 ZOEDAL

DATE: 16 January 1992

TO: Willie Nelson

FAX NUMBER: 703/305-6596

LOCATION: Team 18 - 2nd Floor

FROM: Kelly J. Parker

NUMBER OF PAGES: 1

SUBJECT: **Response to Methoprene RED Information Request**

Zoecon RF-292 Briquet: EPA Reg. No. 2724-421

Altosid® Briquet: EPA Reg. No. 2724-375

The following products are used in water (intermittently flooded sites):

Altosid Liquid Larvicide, EPA Reg. No. 2724-392

Zoecon RF-292 Briquet, EPA Reg. No. 2724-421

Altosid Briquet, EPA Reg. No. 2724-375

Zoecon RF-379 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446

Zoecon RF-330 Altosid Pellets, EPA Reg. No. 2724-448

# Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

20 November 1991

Mr. Willie Nelson  
Product Management Team (18)  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall, Bldg. 2  
1921 Jefferson Davis Hwy.  
Arlington, VA 22202

RE: Methoprene Reregistration, List A - Case 0030

Dear Mr. Nelson:

Enclosed in quadruplicate are data in support of reregistration of the subject products containing methoprene as the active ingredient. Please disregard suffixes in the code names for products. Those are strictly internal designations.

**Zoecon RF-174 Flea Growth Regulator, EPA Reg. No. 2724-286**  
**Product Specific ID# 2724-RD-7**

<u>MRID Number</u>	<u>Study</u>
_____	Wilkins, C. <u>Storage Stability of Methoprene EC 65% (RF 174) EPA Reg. No. 2724-286, 2724-405, 55947-88, 55947-94.</u> Zoecon Study Number 1747. Unpublished. 22 pages.
_____	Moorman, R., Thornton, K., Nguyen K., Sheehan, T., Lephart, J., <u>Precision and Accuracy for Current Analytical Procedure (CAP) Number 337, "Determination of Methoprene in RF 174 by Gas Chromatography Analysis".</u> Zoecon Study Number 1539. Unpublished. 16 pages.
_____	McDaniel, J., Moorman, R., Nguyen, K., Thornton, K., Sheehan, T., Lephart, J. <u>Color, Physical State, Odor, Specific Gravity, pH, Flashpoint, and Viscosity of RF 174, EPA Registration Numbers 2724-286, 2724-405, 55947-88 and 55947-94.</u> Zoecon Study Number 1758. Unpublished. 23 pages.
_____	Schindler, J.E., and Baldwin, R.C. <u>Zoecon Sample No. R174 SAN 800 I 66EC: Acute Oral Toxicity Study in Male and Female Rats . SRI Study No. LSC 2673-M027-91.</u> Zoecon Study No. 1728. Unpublished. 41 pages.
_____	Schindler, J.E., and Baldwin, R.C. <u>Zoecon Sample No. R174 SAN 800 I 66EC: Primary Skin Irritation Study in Rabbits.</u> SRI Study No. LSC 2673-M029-91. Zoecon Study No. 1730. Unpublished. 40 pages.



Schindler, J.E., and Baldwin, R.C. Zoecon Sample No. R174 SAN 800 I 66EC: Eye Irritation Study in Rabbits. SRI Study No. LSC 2673-M030-91. Zoecon Study No. 1731. Unpublished. 42 pages.

Schindler, J.E., and Baldwin, R.C. Zoecon Sample No. R174 SAN 800 I 66EC: Acute Dermal Toxicity Study in Male and Female Rabbits. SRI Study No. LSC 2673-M028-91. Zoecon Study No. 1729. Unpublished. 39 pages.

Schindler, J.E., and Baldwin, R.C. Zoecon Sample No. R174 SAN 800 I 66EC: Skin Sensitization Study in Guinea Pigs. SRI Study No. LSC 2673-M031-91. Zoecon Study No. 1732. Unpublished. 60 pages.

Please note that these data are also being submitted in support of Diacon, EPA Reg. No. 55947-94, Product ID# 55947-RD-94 for our sister company, Sandoz Crop Protection Corporation.

**Apex 5E, EPA Reg. No. 55947-88  
Product Specific ID# 55947-RD-88**

Zoecon Studies 1539, 1728, 1729, 1730, 1731, 1732, 1747, 1758 are all applicable to this product. The formulations are identical, the registered use sites are different. A letter certifying Zoecon Corporation as an agent of Sandoz Crop Protection Corporation, is being provided under separate cover. As their agent, we are providing the above data in support of the Apex 5E registration currently being transferred to Zoecon.

**Zoecon RF-274 Fogger, EPA Reg. No. 2724-337  
Product Specific ID# 2724-RD-22**

MRID Number

Study

Wilkins, C. Stability of (S)-Methoprene/Permethrin Solvent Based Fogger/Aerosol (RF274B) EPA Reg. No. 2724-337. Zoecon Study Number 1301. Unpublished. 14 pages.

Moorman, R., Thornton, K., Nguyen K., Sheehan, T., Lephart, J., Precision and Accuracy for Current Analytical Procedure (CAP) Number 63C, "Procedure for the Analysis of Permethrin and Methoprene in RF 274 and RF 280 (Solvent Based Foggers and Aerosols)". Zoecon Study Number 1539. Unpublished. 21 pages.

Clark, A. Physical and Chemical Properties Testing for Zoecon RF-274 Fogger. MRI No. 9914-F. Zoecon No. 1672. Unpublished. 13 pages.

McDaniel, J. Flash Point Determination of Zoecon RF-274 Fogger Concentrate. Zoecon Study Number 1680. Unpublished. 8 pages.

Schindler, J.E., and Baldwin, R.C. Zoecon Sample No. R274B SAN 1139 I5.8AE Skin Sensitization Study in Guinea Pigs. SRI Study No. LSC 2673-M037-91. Zoecon Study No. 1738. Unpublished. 55 pages.

**Zoecon RF-275 Pressurized Spray, EPA Reg. No. 2724-338  
Product Specific ID# 2724-RD-23**

MRID Number

Study

Clark, A. Physical and Chemical Properties Testing for Zoecon RF-275 Pressurized Spray. MRI No. 9914-F. Zoecon No. 1674. Unpublished. 15 pages.

McDaniel, J. Flash Point Determination of Zoecon RF-275 Aerosol Concentrate. Zoecon Study Number 1680. Unpublished. 8 pages.

Moorman, R., Thornton, K., Nguyen K., Sheehan, T., Lephart, J., Precision and Accuracy for Current Analytical Procedure (CAP) Number 324 "Procedure for the Analysis of Methoprene, Synergist MGK-264, Pyrethrins and PBO in a Water-Based System (Including RF 275)". Zoecon Study Number 1539. Unpublished. 19 pages.

**Zoecon RF-280 Aerosol, EPA Reg. No. 2724-339**  
**Product Specific ID# 2724-RD-24**

<u>MRID Number</u>	<u>Study</u>
_____	Clark, A. <u>Physical and Chemical Properties Testing for Zoecon RF-280 Aerosol</u> . MRI No. 9914-F. Zoecon No. 1671. Unpublished. 13 pages.
_____	McDaniel, J. <u>Flash Point Determination of Zoecon RF-280 Aerosol Concentrate</u> . Zoecon Study Number 1680. Unpublished. 8 pages.

Zoecon Study 1301, 1539, and 1738 listed above for Zoecon RF-274 Fogger are also applicable to this product. The only difference in the two products is a small difference in the amount of propellant.

**Zoecon RF-291 Emulsifiable Concentrate, EPA Reg. No. 2724-352**  
**Product Specific ID# 2724-RD-25**

<u>MRID Number</u>	<u>Study</u>
_____	Moorman, R., Thornton, K., Nguyen K., Sheehan, T., Lephart, J., <u>Precision and Accuracy for Current Analytical Procedure (CAP) Number 329, "Procedure for the Analysis for Methoprene in a Methoprene Emulsifiable Concentrate (RF 291)"</u> . Zoecon Study Number 1539. Unpublished. 16 pages.
_____	McDaniel, J., Moorman, R., Nguyen, K., Thornton, K., Sheehan, T., Lephart, J. <u>Color, Physical State, Odor, Specific Gravity, Flammability-Flashpoint, and Viscosity of RF-291</u> . EPA Registration Number 2724-352. Zoecon Study Number 1667. Unpublished. 23 pages.

**Zoecon RF-293 Methoprene Bolus, EPA Reg. No. 2724-356**  
**Product Specific ID# 2724-RD-26**

_____	Wilkins, C. <u>Storage Stability of Methoprene Bolus (RF 293) EPA Reg. No. 2724-356</u> . Zoecon Study Number 1744. Unpublished. 19 pages.
_____	Moorman, R., Thornton, K., Sheehan, T., Lephart, J. <u>Color, Physical State, Odor, and Density of RF 293, EPA Registration Number 2724-356</u> . Zoecon Study Number 1712. Unpublished. 17 pages.
_____	Moorman, R., Thornton, K., Nguyen K., Sheehan, T., Lephart, J., <u>Precision and Accuracy for Current Analytical Procedure (CAP) Number 223C, "Procedure for the Analysis of Methoprene in RF 293, (Methoprene Bolus)"</u> . Zoecon Study Number 1539. Unpublished. 16 pages.

**Zoecon RF-297 Aerosol, EPA Reg. No. 2724-360**  
**Product Specific ID# 2724-RD-27**

<u>MRID Number</u>	<u>Study</u>
_____	Wilkins, C. <u>Storage Stability of (S)-Methoprene/Permethrin Water Based Aerosol (RF297A) EPA Reg. No. 2724-360</u> . Zoecon Number 1308. Unpublished. 14 pages.
_____	Clark, A. <u>Physical and Chemical Properties Testing for Zoecon RF-297 Aerosol</u> . MRI No. 9914-F. Zoecon No. 1673. Unpublished. 15 pages.
_____	McDaniel, J. <u>Flash Point Determination of Zoecon RF-297 Aerosol Concentrate</u> . Zoecon Study Number 1680. Unpublished. 9 pages.
_____	Moorman, R., Thornton, K., Nguyen K., Sheehan, T., Lephart, J., <u>Precision and Accuracy for Current Analytical Procedure (CAP) Number 310 "Procedure for the Analysis of Water Based Aerosols Containing Permethrin and Methoprene (Including RF 297)"</u> . Zoecon Study Number 1539. Unpublished. 20 pages.



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Schindler, J.E., and Baldwin, R.C. Zoecon Sample No. R297 ZOE 014I.47AE: Acute Oral Toxicity Study in Male and Female Rats. SRI Study No. LSC 2561-M008-91. Zoecon Study No. 1675. Unpublished. 34 pages.

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Schindler, J.E., and Baldwin, R.C. Zoecon Sample No. R297 ZOE 014I.47AE: Acute Dermal Toxicity Study in Male and Female Rabbits. SRI Study No. LSC 2561-M009-91. Zoecon Study No. 1676. Unpublished. 43 pages.

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Schindler, J.E., and Baldwin, R.C. Zoecon Sample No. R297 ZOE 014I.47AE: Primary Skin Irritation Study in Rabbits. SRI Study No. LSC 2561-M010-91. Zoecon Study No. 1677. Unpublished. 42 pages.

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Schindler, J.E., and Baldwin, R.C. Zoecon Sample No. R297 ZOE 014I.47AE: Primary Eye Irritation Study in Rabbits. SRI Study No. LSC 2561-M011-91. Zoecon Study No. 1678. Unpublished. 44 pages.

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Schindler, J.E., and Baldwin, R.C. Zoecon Sample No. R297 ZOE 014I.47AE: Skin Sensitization Study in Guinea Pigs. SRI Study No. LSC 2561-M012-91. Zoecon Study No. 1679. Unpublished. 59 pages.

**ALTOSID CP-10, EPA Reg. No. 2724-367**  
**Product Specific ID# 2724-RD-28**

\_\_\_\_\_  
Moorman, R., Thornton, K., Sheehan, T., Lephart, J. Color, Physical State, Odor, and Density of RF 74, EPA Registration Number 2724-367. Zoecon Study Number 1712. Unpublished. 17 pages.

\_\_\_\_\_  
Moorman, R., Thornton, K., Nguyen K., Sheehan, T., Lephart, J., Precision and Accuracy for Current Analytical Procedure (CAP) Number 77A, "Procedure for the Analysis of (R,S)-Methoprene in RF 74, (CP10)". Zoecon Study Number 1539. Unpublished. 16 pages.

**Granular IGR Cattle Supplement, EPA Reg. No. 2724-372**  
**Product Specific ID# 2724-RD-30**

\_\_\_\_\_  
Sheehan, T. Precision and Accuracy for Current Analytical Procedure (CAP) Number 335, "Procedure for the Analysis for (R,S)-Methoprene in Zoecon's Granular and Block Cattle Supplements EPA REG NOS 2724-372 and 2724-373". Zoecon Study Number 1721. Unpublished. 22 pages.

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Moorman, R., Thornton, K., Sheehan, T., Lephart, J. Color, Physical State, Odor, and Density for 9118SAN800I0.02GB, Granular Feed Supplement, EPA Registration Number 2724-372. Zoecon Study Number 1726. Unpublished. 17 pages.

**Block IGR Cattle Supplement, EPA Reg. No. 2724-373**  
**Product Specific ID# 2724-RD-31**

MRID Number      Study

\_\_\_\_\_  
Moorman, R., Thornton, K., Sheehan, T., Lephart, J. Color, Physical State, Odor, and Density for 9119SAN800I0.02BB, Block Feed Supplement, EPA Registration Number 2724-373. Zoecon Study Number 1726. Unpublished. 17 pages.

Zoecon Study 1721 listed above for Granular IGR Cattle Supplement (EPA Reg. No. 2724-372) also provides precision and accuracy data for this cattle supplement product. The formulas are essentially identical.

**ALTOSID Briquets, EPA Reg. No. 2724-375**  
**Product ID# 2724-RD-33**

<u>MRID Number</u>	<u>Study</u>
_____	Moorman, R., Nguyen, K., Thornton, K., Sheehan, T., Lephart, J. <u>Color, Physical State, Odor, and Density of RF 433N, EPA Registration Number 2724-375.</u> Zoecon Study Number 1712. Unpublished. 17 pages.
_____	Moorman, R., Thornton, K., Nguyen K., Sheehan, T., Lephart, J., <u>Precision and Accuracy for Current Analytical Procedure (CAP) Number 325, "Procedure for the Analysis of Methoprene in RF 433N (30 Day Briquet and Briquet Premix)".</u> Zoecon Study Number 1539. Unpublished. 16 pages.

**Kabat Tobacco Protector, EPA Reg. No. 2724-377**  
**Product Specific ID# 2724-RD-34**

<u>MRID Number</u>	<u>Study</u>
_____	McDaniel, J., Moorman, R., Thornton, K., Sheehan, T., Lephart, J. <u>Color, Physical State, Odor, Specific Gravity, Flammability-Flashpoint, and Viscosity of RF-385N, EPA Registration Number 2724-377.</u> Zoecon Study Number 1667. Unpublished. 23 pages.
_____	Moorman, R., Thornton, K., Nguyen K., Sheehan, T., Lephart, J., <u>Precision and Accuracy for Current Analytical Procedure (CAP) Number 321 "Determination of Methoprene in RF 385N and RF 386N (Kabat)".</u> Zoecon Study Number 1539. Unpublished. 17 pages.

**Kabat Protector Concentrate, EPA Reg. No. 2724-384**  
**Product Specific ID# 2724-RD-36**

<u>MRID Number</u>	<u>Study</u>
_____	McDaniel, J., Moorman, R., Thornton, K., Sheehan, T., Lephart, J. <u>Color, Physical State, Odor, Specific Gravity, Flammability-Flashpoint, and Viscosity of RF-386N, EPA Registration Number 2724-384.</u> Zoecon Study Number 1667. Unpublished. 21 pages.

Zoecon Study 1539 listed above for Kabat Tobacco Protector provides precision and accuracy data on the analytical method for both products. These two products are identical except in the level of methoprene; the Kabat Tobacco Protector is 5% methoprene and the Concentrate product is 80% methoprene.

**Altosid Liquid Larvicide, EPA Reg. No. 2724-392**  
**Product Specific ID# 2724-41**

<u>MRID Number</u>	<u>Study</u>
_____	McDaniel, J., Moorman, R., Nguyen, K., Thornton, K., Sheehan, T., Lephart, J. <u>Color, Physical State, Odor, Specific Gravity, Flammability-Flashpoint, and Viscosity of RF-438N, EPA Registration Number 2724-392.</u> Zoecon Study Number 1667. Unpublished. 24 pages.
_____	Moorman, R., Thornton, K., Nguyen K., Sheehan, T., Lephart, J., <u>Precision and Accuracy for Current Analytical Procedure (CAP) Number 328, "Procedure for the Analysis of (S)-Methoprene in RF 437N, RF438N and RF 329 (Altosid Liquid Larvicide SR-20, SR-5 and Pharorid)".</u> Zoecon Study Number 1539. Unpublished. 23 pages.



**Altosid Liquid Larvicide Concentrate, EPA Reg. No. 2724-393**  
**Product Specific ID# 2724-42**

<u>MRID Number</u>	<u>Study</u>
_____	McDaniel, J., Moorman, R., Nguyen, K., Thornton, K., Sheehan, T., Lephart, J. <u>Color, Physical State, Odor, Specific Gravity, pH, Flammability-Flashpoint, and Viscosity of RF-437N, EPA Registration Numbers 2724-393 and 2724-446.</u> Zoecon Study Number 1667. Unpublished. 24 pages.
_____	Schindler, J.E., and Baldwin, R.C. <u>Zoecon Sample No. R437N SAN 810 I20CS: Acute Oral Toxicity Study in Male and Female Rats . SRI Study No. LSC 2673-M032-91.</u> Zoecon Study No. 1733. Unpublished. 36 pages.
_____	Schindler, J.E., and Baldwin, R.C. <u>Zoecon Sample No. R437N SAN 810 I20CS: Acute Dermal Toxicity Study in Male and Female Rabbits . SRI Study No. LSC 2673-M033-91.</u> Zoecon Study No. 1734. Unpublished. 41 pages.
_____	Schindler, J.E., and Baldwin, R.C. <u>Zoecon Sample No. R437N SAN 810 I20CS: Primary Skin Irritation Study in Rabbits . SRI Study No. LSC 2673-M034-91.</u> Zoecon Study No. 1735. Unpublished. 39 pages.
_____	Schindler, J.E., and Baldwin, R.C. <u>Zoecon Sample No. R437N SAN 810 I20CS: Eye Irritation Study in Rabbits . SRI Study No. LSC 2673-M035-91.</u> Zoecon Study No. 1736. Unpublished. 44 pages.
_____	Schindler, J.E., and Baldwin, R.C. <u>Zoecon Sample No. R437N SAN 810 I20CS: Skin Sensitization Study in Guinea Pigs . SRI Study No. LSC 2673-M036-91.</u> Zoecon Study No. 1737. Unpublished. 54 pages.

Zoecon Study Number 1539 listed above for Altosid Liquid Larvicide provides precision and accuracy data on the analytical method for both products.

**Zoecon RF-299 RTU Carpet Pump Spray, EPA Reg. No. 2724-401**  
**Product Specific ID# 2724-44**

<u>MRID Number</u>	<u>Study</u>
_____	Wilkins, C. <u>Stability of (S)-Methoprene/Permethrin Pump Spray EPA Reg. No. 2724-401.</u> Zoecon Study Number 1283. Unpublished. XX pages.
_____	McDaniel, J., Moorman, R., Nguyen, K., Thornton, K., Sheehan, T., Lephart, J. <u>Color, Physical State, Odor, Specific Gravity, pH, Flammability-Flashpoint, and Viscosity of RF-299, EPA Registration Number 2724-401.</u> Zoecon Study Number 1667. Unpublished. 23 pages.
_____	Lephart, J. <u>Method Validation for the Analysis of (R,S)-Methoprene or (S)-Methoprene and Permethrin in a RTU Water-based Carpet Spray.</u> Zoecon Project Code R299SAN11291.26AL. 1303 Report-VMOA. Unpublished. 62 pages.

**Zoecon RF-322 Ovicidal Pump Spray, EPA Reg. No. 2724-404**  
**Product Specific ID# 2724-RD-46**

<u>MRID Number</u>	<u>Study</u>
_____	Wilkins, C. <u>Stability of Ovitrol Flea &amp; Tick Pump Spray (RF322) EPA Reg. No. 2724-401 (sic).</u> Zoecon Study Number 1283. Unpublished. XX pages.
_____	Moorman, R., Thornton, K., Nguyen K., Sheehan, T., Lephart, J., <u>Precision and Accuracy for Current Analytical Procedure (CAP) Number 242B, "Procedure for the Analysis of S-Methoprene, PBO, Pyrethrins and MGK-264 in Alcohol-Based Pump Spray (Including RF 322)".</u> Zoecon Study Number 1539. Unpublished. 20 pages.

McDaniel, J., Moorman, R., Nguyen, K., Thornton, K., Sheehan, T., Lephart, J. Color, Physical State, Odor, Specific Gravity, pH, Flammability-Flashpoint, and Viscosity of RF-322, EPA Registration Number 2724-404. Zoecon Study Number 1667. Unpublished. 23 pages.

**Zoecon RF-329 Ant Growth Regulator, EPA Reg. No. 2724-420**  
**Product Specific ID# 2724-RD-48**

MRID Number      Study

McDaniel, J., Moorman, R., Thornton, K., Sheehan, T., Lephart, J. Color, Physical State, Odor, Specific Gravity, Flammability-Flashpoint, and Viscosity of RF-329, EPA Registration Number 2724-420. Zoecon Study Number 1667. Unpublished. 24 pages.

Schindler, J.E., and Baldwin, R.C. Zoecon Sample No. R329 SAN 810 I4.8CB: Skin Sensitization Study in Guinea Pigs. SRI Study No. LSC 2673-M038-91. Zoecon Study No. 1739. Unpublished. 56 pages.

Zoecon Study 1539 listed above for ALTOSID Liquid Larvicide, EPA Reg. No. 2724-392 is also applicable to this product as they are essentially identical formulations.

**Zoecon RF-292 Briquet, EPA Reg. No. 2724-421**  
**Product Specific ID# 2724-RD-49**

MRID Number      Study

Moorman, R., Thornton, K., Sheehan, T., Lephart, J. Color, Physical State, Odor, and Density of RF 292A, EPA Registration Number 2724-421. Zoecon Study Number 1712. Unpublished. 17 pages.

Nguyen, K. Method for the Assay of S-Methoprene in Briquets. Zoecon Study TR-1275. Unpublished. 70 pages.

**Zoecon RF-342 Emulsifiable Concentrate, EPA Reg. No. 2724-427**  
**Product Specific ID# 2724-RD-50**

MRID Number      Study

Moorman, R., Thornton, K., Nguyen, K., Sheehan, T., Lephart, J., Precision and Accuracy for Current Analytical Procedure (CAP) Number 330, "Procedure for the Analysis for Methoprene in RF 342 (Dianex)". Zoecon Study Number 1539. Unpublished. 16 pages.

McDaniel, J., Moorman, R., Nguyen, K., Thornton, K., Sheehan, T., Lephart, J. Color, Physical State, Odor, Specific Gravity, pH, Flammability-Flashpoint, and Viscosity of RF-342, EPA Registration Number 2724-427. Zoecon Study Number 1667. Unpublished. 23 pages.

**Methoprene Technical, EPA Reg. No. 2724-441**  
**Product Specific ID# 2724-RD-56**

MRID Number      Study

McDaniel, J., Moorman, R., Nguyen, K., Thornton, K., Sheehan, T., Lephart, J. Color, Physical State, Odor, Specific Gravity, pH, Flammability-Flashpoint, and Viscosity of (R,S)-Methoprene, EPA Registration Number 2724-441. Zoecon Study Number 1669. Unpublished. 21 pages.



Moorman, R., Thornton, K., Nguyen K., Sheehan, T., Lephart, J., Precision and Accuracy for Current Analytical Procedure (CAP) Number 284, "Procedure for The Analysis of Technical Methoprene (EPA Registration Numbers 2724-441 and 2724-442)". Zoecon Study Number 1539. Unpublished. 17 pages.

**(S)-Methoprene Technical, EPA Reg. No. 2724-442**  
**Product Specific ID# 2724-RD-51**

MRID Number

Study

McDaniel, J., Moorman, R., Thornton, K., Sheehan, T., Lephart, J. Color, Physical State, Odor, Specific Gravity, pH, Flammability-Flashpoint, and Viscosity of (S)-Methoprene, EPA Registration Number 2724-442. Zoecon Study Number 1669. Unpublished. 21 pages.

Zoecon Study 1539 listed above for Methoprene Technical also provides precision and accuracy data for the current analytical procedure for S-Methoprene Technical.

**Zoecon RF-437 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446**  
**Product Specific ID# 2724-RD-439**

Zoecon Studies 1667, 1733, 1734, 1735, 1736, 1737 listed above for ALTOSID Liquid Larvicide Concentrate are also applicable to this product, since their formulations are identical. The only difference in the two products is in their labels; ALTOSID Liquid Larvicide is a manufacturing-use product and RF-437 carries an end-use label.

Zoecon Study 1539 listed above for ALTOSID Liquid Larvicide, EPA Reg. No. 2724-392 is also applicable to this product as they are essentially identical formulations.

**Zoecon RF-330 ALTOSID Pellets, EPA Reg. No. 2724-448**  
**Product Specific ID# 2724-RD-52**


MRID Number

Study

Nguyen, K. Method Validation for the Analysis of (S)-Methoprene in Altosid Pellets and Premix. Zoecon Project Code R330SAN810I4XX. 1413 Report-VMOA. Unpublished. 34 pages.

Schweitzer, M. Product Chemistry of Altosid Pellets. Battelle Study Number SC900157. Zoecon Study Number 1565. Unpublished. 24 pages.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

<b>(A)</b> 	United States Environmental Protection Agency Office of Pesticide Programs (H7505C) Washington, DC 20460 <b>Application for Pesticide:</b>	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number  <div style="font-size: 24pt; text-align: center;">156411</div>
----------------	---	--	---

**Section I**

1. Company/Product Number 2724-446	2. EPA Product Manager Phil Hutton	3. Proposed Classification  <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Zoecon RF-437 Mosquito Growth Regulator SR-20	PM# 18	
5. Name and Address of Applicant (Include ZIP Code) Zoecon Corporation A Sandoz Company 12200 Denton Drive Dallas, TX 75234 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:  EPA Reg. No. _____ Product Name: _____	

**Section II**

<input type="checkbox"/> Amendment - Explain below  <input type="checkbox"/> Resubmission in response to Agency letter dated _____  <input type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____  <input type="checkbox"/> "Me Too" Application.  <input checked="" type="checkbox"/> Other - explain below.
--	--

**Explanation:** Use additional page(s) if necessary. (For section I and Section II.)

Application for Reregistration

**Section III**

<b>1. Material This Product Will Be Packaged In:</b>			
Child-Resistant Packaging  <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2. Type of Container  <input checked="" type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
* Certification must be submitted.		If "Yes," Unit Package wgt.    No. per container _____    _____	If "Yes," Package wgt.    No. per container _____    _____
3. Location of Net Contents Information  <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) of Retail Container  1 oz. to 55 gallons	
5. Location of Label Directions  <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product		6. Manner In Which Label Is Affixed To Product  <input type="checkbox"/> Lithograph <input checked="" type="checkbox"/> Paper glued <input type="checkbox"/> Other ( _____ ) <input type="checkbox"/> Stenciled	

**Section IV**

<b>1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)</b>			
Name  Kelly J. Parker	Title  Regulatory Specialist	Telephone No. (Include Area Code)  214/888-8726	
<b>Certification</b>  I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.			6. Date Application Received  (Stamped)
2. Signature  	3. Title  Regulatory Specialist		<div style="font-size: 24pt;">78</div>
4. Typed Name  Kelly J. Parker	5. Date  20 November 1991		





## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-437 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-437, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-437 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides.

Zoecon RF-437 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-437 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides.

After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive.

Because the effect of Zoecon RF-437 is neither larval death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

1091-C:0192E;RED

### CHECK LIST

Things to remember when using Zoecon RF-437 Mosquito Growth Regulator SR-20

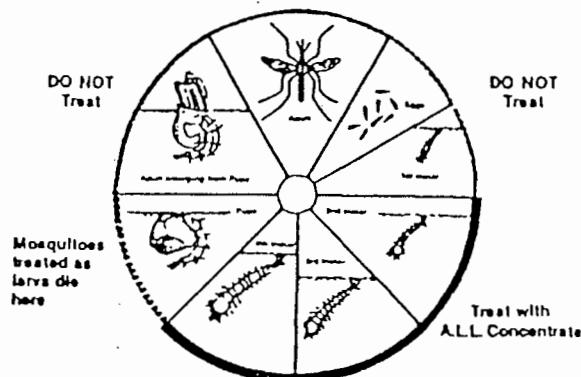
DO the following:

1. DO treat second, third and/or fourth instar larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-437 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-437 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-437 can only be measured by lack of adult emergence.

### LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20



### Preparation of ALTOSAND® Granular Formulation

#### An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-437 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-437, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredients reach the water where they are released from the sand. ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100 lb. batch of ALTOSAND:

99 lbs. washed, dry sand (20-45 mesh)  
0.5 lbs. Zoecon RF-437 (7.5 fluid oz.)  
0.5 lbs. Hsilil 233 (silicon dioxide)  
Small Funnel  
Cement Mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer, place 99 lbs. of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 lbs. (7.5 fluid ounce) of Zoecon RF-437, onto the sand. (If better wetting is required, Zoecon RF-437 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-437 (usually 5 to 10 minutes).
4. Stop the mixer and add 0.5 lbs. of Hsilil 233. Cover the mixer to reduce dust. Start the mixer and run for approximately 5 minutes. (The quantity of Hsilil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture of the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in Step No. 1. Add more Hsilil if it flows significantly slower and reduce the amount of Hsilil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of 8 to 10 pounds of the final mixture per acre using standard granular dispersal equipment.



Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

20 May 1991

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

RE: Request for an Extension of Storage Stability Data  
Guideline 151B-17(I)  
Product Specific ID# 2724-RD-?? (we didn't receive a response form for this product)  
EPA Reg. No. 2724-446

Dear Mr. Nelson:

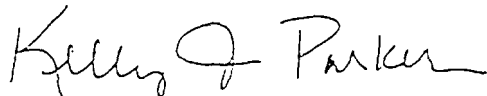
Zoecon Corporation respectfully requests an extension for submission of storage stability data for the subject product. We would like to submit a final report for this study in October 1992.

According to FIFRA as amended in 1988, there is no legislated timeframe for submission of product specific data for List A products (although Lists B, C, and D are subject to the 8 month rule); therefore, the length of our requested extension should pose no regulatory problem. For storage stability studies, EPA currently requires 3 lots, 3 temperatures, and 1 year's worth of GLP data. In the best of circumstances, this is unachievable within 8 months.

According to 40 CFR § 160.29(c), "There shall be a sufficient number of personnel for the timely and proper conduct of the study according to the protocol." Considering all of the GLP storage stability studies required by the Methoprene RED, Zoecon would need to hire 50 more people to conduct the studies, as well as the inherent need to build more stability storage space. I've been told by management that these are not viable options. We have come up with a schedule that would allow Zoecon to comply with the RED by conducting the stability studies in shifts. This will also allow Zoecon to remain in compliance with § 160.29(c) and allow us to use available storage space.

Please let me know as soon as possible whether our request for an extension has been granted.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Phil Hutton, RD, EPA  
Karen Samek, SRRD, EPA



# EPA

United States Environmental Protection Agency  
Washington, D.C. 20460

## REQUIREMENTS STATUS AND REGISTRANTS RESPONSE

Form Approved

OMB No. 2070-0107

Approval Expires 12-31-92

INSTRUCTIONS: Please type or print in ink. Please read carefully the attached instructions and supply the information requested on this form. Use additional sheet(s) if necessary.

1. Company name and Address <b>ZOECON CORP. - A SANDOZ COMPANY</b> <b>12200 DENTON DRIVE</b> <b>DALLAS, TX. 75234</b>			2. Case # and Name <b>0030 Methoprene</b> Chemical # and Name <b>105401 Methoprene</b> EPA Reg. No. <b>2724-446</b>			3. Date and Type of DCI <b>PRODUCT SPECIFIC</b> ID# <b>2724-RD-439</b>			
4. Guideline Requirement Number	5. Study Title	PROTOCOL	Progress Reports			6. Use Pattern	7. Test Substance	8. Time Frame	9. Registrant Response
			1 yr	2 yrs	3 yrs				
151B-10	Product Identity					ALL	EP	8 mos.	1
151B-11	Manufacturing Process					ALL	EP	8 mos.	1
141B-12	Discussion of impurities					ALL	EP	8 mos.	7
151B-13	Analysis of Samples					ALL	EP	8 mos.	7
151B-15	Certification of limits					ALL	EP	8 mos.	1
151B-16	Analytical method					ALL	EP	8 mos.	1
151B-17(a)	Color					ALL	EP	8 mos.	1
151B-17(b)	Physical state					ALL	EP	8 mos.	1
151B-17(c)	Odor					ALL	EP	8 mos.	1
151B-17(d)	Melting point					ALL	EP	8 mos.	1
151B-17(e)	Boiling point					ALL	EP	8 mos.	7
151B-17(f)	Density					ALL	EP	8 mos.	7
151B-17(g)	Solubility					ALL	EP	8 mos.	1
151B-17(h)	Vapor pressure					ALL	EP	8 mos.	7
151B-17(i)	pH					ALL	EP	8 mos.	7
151B-17(j)	Stability					ALL	EP	8 mos.	1
151B-17(k)	Flammability					ALL	EP	8 mos.	7
151B-17(l)	Storage stability					ALL	EP	8 mos.	1
10. Certification I certify that the statements that I have made on this form and all attachments thereto are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law. Signature and Title of Company's Authorized Representative <u>Kelly J. Parker</u> Regulatory Specialist							11. Date  1 July 1991		
12. Name of Company Contact  Kelly J. Parker							13. Phone Number  214/888-8726		

\*Correspondence Attached





# EPA

United States Environmental Protection Agency  
Washington, D.C. 20460

## REQUIREMENTS STATUS AND REGISTRANTS RESPONSE

Form Approved

OMB No. 2070-0107

Approval Expires 12-31-92

INSTRUCTIONS: Please type or print in ink. Please read carefully the attached instructions and supply the information requested on this form. Use additional sheet(s) if necessary.

1. Company name and Address <b>ZOECON CORP. - A SANDOZ COMPANY</b> <b>12200 DENTON DRIVE</b> <b>DALLAS, TX. 75234</b>		2. Case # and Name <b>0030 Methoprene</b> Chemical # and Name <b>105401 Methoprene</b> EPA Reg. No. <b>2724-446</b>			3. Date and Type of DCI <b>PRODUCT SPECIFIC</b> <b>ID# 2724-RD-439</b>				
4. Guideline Requirement Number	5. Study Title	PROTOCOL	Progress Reports			6. Use Pattern	7. Test Substance	8. Time Frame	9. Registrant Response
			1 yr	2 yrs	3 yrs				
151B-17(m)	Viscosity					ALL	EP	8 mos.	1
151B-17(n)	Miscibility					ALL	EP	8 mos.	7
151B-17(o)	Corrosion characteristics					ALL	EP	8 mos.	1*
151B-17(p)	Oct/Water partition coef.					ALL	EP	8 mos.	7
152B-10	Acute oral toxicity					ALL	EP	8 mos.	1
152B-11	Acute dermal toxicity					ALL	EP	8 mos.	1
152B-12	Acute Inhal. toxicity					ALL	EP	8 mos.	1*
152B-13	Primary eye irritation					ALL	EP	8 mos.	1
152B-14	Primary dermal irritation					ALL	EP	8 mos.	1
152B-15	Dermal sensitization					ALL	EP	8 mos.	1
152B-16	Hypersensitivity Incidents					ALL	EP	8 mos.	1
95-10(b)(1)	Prod. Perf. for mosquitoes (cesspools, septic tanks, and waste treatment settling ponds)					Applicable sites	EP	8 mos.	1
									7

Initial to indicate certification as to information on this page  
(full text of certification is on page one)

KP

Date

7/1/91

Zoecon Corporation

A SANDOZ Company

1 July 1991

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

RE: Request for a Waiver of Discussion of Formation of Impurities  
All End-Products and Manufacturing-Products Listed in the RED  
Case Number and Name: 0030 Methoprene

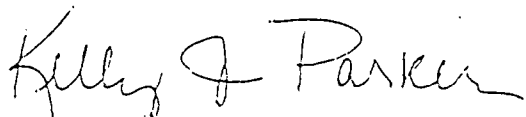
Dear Mr. Nelson:

Zoecon Corporation respectfully requests a waiver of the discussion of Impurities, Guideline 151B-12, for all end-products and manufacturing-products subject to the Methoprene Reregistration Eligibility Decision document (see attached).

These products are not technical active ingredients and they are not produced by an integrated system. The manufacturing and use history of these products show no reactions between the product and the packaging or between ingredients in the product. We've seen no reactions occurring between the product and the production equipment. These products do not contain impurities of toxicological concern such as N-nitrosamines, hexachlorobenzene, polychlorinated or polybrominated dibenzo-p-dioxins or furans.

According to EPA, "end-use products are typically mixtures having no reactions occurring." This is a true statement in the case of Methoprene-containing products. The chemists' time would be better spent generating product-specific product chemistry due by November, rather than theorizing about the possibilities of impurities. Therefore, we request this waiver.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Phil Hutton, RD, EPA  
Dick King, SRRD, EPA



## Products

econ RF-174 Flea Growth Regulator, EPA Reg. No. 2724-286 - Product Specific  
# 2724-RD-7

econ RF-291 Emulsifiable Concentrate, EPA Reg. No. 2724-352 - Product Specific ID# 2724-RD-25

bat Tobacco Protector, EPA Reg. No. 2724-377 - Product Specific ID# 2724-RD-34

bat Tobacco Protector Concentrate, EPA Reg. No. 2724-384 - Product Specific ID# 2724-RD-36

osid Liquid Larvicide, EPA Reg. No. 2724-392 - Product Specific ID# 2724-RD-41

osid Larvicide Concentrate, EPA Reg. No. 2724-393 - Product Specific ID# 2724-RD-42

econ RF-299 RTU Carpet Pump Spray, EPA Reg. No. 2724-401 - Product Specific ID# 2724-RD-44

econ RF-322 Ovicidal Pump Spray, EPA Reg. No. 2724-404 - Product Specific ID# 2724-RD-46

econ RF-329 Ant Growth Regulator, EPA Reg. No. 2724-420 - Product Specific ID# 2724-RD-48

econ RF-342 Emulsifiable Concentrate, EPA Reg. No. 2724-427 - Product Specific ID# 2724-RD-50

econ RF-379 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446 - Product Specific  
# 2724-RD-439

econ RF-274 Fogger, EPA Reg. No. 2724-337 - Product Specific ID# 2724-RD-22

econ RF-275 Pressurized Spray, EPA Reg. No. 2724-338 - Product Specific ID# 2724-RD-23

econ RF-280 Aerosol, EPA Reg. No. 2724-339 - Product Specific ID# 2724-RD-24

econ RF-293 Methoprene Bolus, EPA Reg. No. 2724-356 - Product Specific ID# 2724-RD-26

econ RF-297 Aerosol, EPA Reg. No. 2724-360 - Product Specific ID# 2724-RD-27

JOSID CP-10, EPA Reg. No. 2724-367 - Product Specific ID# 2724-RD-28

arbar Block IGR Cattle Supplement, EPA Reg. No. 2724-368 - Product Specific  
# 2724-RD-29

anular IGR Cattle Supplement, EPA Reg. No. 2724-372 - Product Specific ID# 2724-RD-30

ock IGR Cattle Supplement, EPA Reg. No. 2724-373 - Product Specific ID# 2724-RD-31

JOSID Briquets, EPA Reg. No. 2724-375 - Product Specific ID# 2724-RD-33

econ RF-292 Briquet, EPA Reg. No. 2724-421 - Product Specific ID# 2724-RD-49

econ RF-330 ALTOSID Pellets, EPA Reg. No. 2724-448 - Product Specific ID# 2724-RD-52

Zoecon Corporation  
A SANDOZ Company  
12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

1 July 1991

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

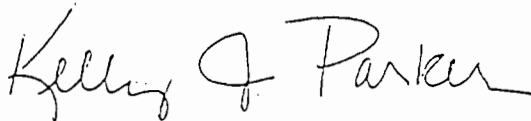
RE: Request for a Waiver of Analysis of Samples  
All End-Products and Manufacturing-Products Listed in the RED  
Case Number and Name: 0030 Methoprene

Dear Mr. Nelson:

Zoecon Corporation respectfully requests a waiver of the analysis of samples, Guideline 151B-13, for all end-products and manufacturing-products subject to the Methoprene Reregistration Eligibility Decision document (see attached).

These products are not technical active ingredients and they are not produced by an integrated system; therefore, this requirement is not applicable.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Phil Hutton, RD, EPA  
Dick King, SRRD, EPA



ducts

acon RF-174 Flea Growth Regulator, EPA Reg. No. 2724-286 - Product Specific  
# 2724-RD-7

acon RF-291 Emulsifiable Concentrate, EPA Reg. No. 2724-352 - Product Specific ID# 2724-RD-25

bat Tobacco Protector, EPA Reg. No. 2724-377 - Product Specific ID# 2724-RD-34

bat Tobacco Protector Concentrate, EPA Reg. No. 2724-384 - Product Specific ID# 2724-RD-36

osid Liquid Larvicide, EPA Reg. No. 2724-392 - Product Specific ID# 2724-RD-41

osid Larvicide Concentrate, EPA Reg. No. 2724-393 - Product Specific ID# 2724-RD-42

acon RF-299 RTU Carpet Pump Spray, EPA Reg. No. 2724-401 - Product Specific ID# 2724-RD-44

acon RF-322 Ovicidal Pump Spray, EPA Reg. No. 2724-404 - Product Specific ID# 2724-RD-46

acon RF-329 Ant Growth Regulator, EPA Reg. No. 2724-420 - Product Specific ID# 2724-RD-48

acon RF-342 Emulsifiable Concentrate, EPA Reg. No. 2724-427 - Product Specific ID# 2724-RD-50

acon RF-379 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446 - Product Specific  
# 2724-RD-439

acon RF-274 Fogger, EPA Reg. No. 2724-337 - Product Specific ID# 2724-RD-22

acon RF-275 Pressurized Spray, EPA Reg. No. 2724-338 - Product Specific ID# 2724-RD-23

acon RF-280 Aerosol, EPA Reg. No. 2724-339 - Product Specific ID# 2724-RD-24

acon RF-293 Methoprene Bolus, EPA Reg. No. 2724-356 - Product Specific ID# 2724-RD-26

acon RF-297 Aerosol, EPA Reg. No. 2724-360 - Product Specific ID# 2724-RD-27

TOSID CP-10, EPA Reg. No. 2724-367 - Product Specific ID# 2724-RD-28

arbar Block IGR Cattle Supplement, EPA Reg. No. 2724-368 - Product Specific  
# 2724-RD-29

anular IGR Cattle Supplement, EPA Reg. No. 2724-372 - Product Specific ID# 2724-RD-30

ock IGR Cattle Supplement, EPA Reg. No. 2724-373 - Product Specific ID# 2724-RD-31

TOSID Briquets, EPA Reg. No. 2724-375 - Product Specific ID# 2724-RD-33

acon RF-292 Briquet, EPA Reg. No. 2724-421 - Product Specific ID# 2724-RD-49

acon RF-330 ALTOSID Pellets, EPA Reg. No. 2724-448 - Product Specific ID# 2724-RD-52

**Zoecon Corporation**  
*A SANDOZ Company*  
12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

1 July 1991

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

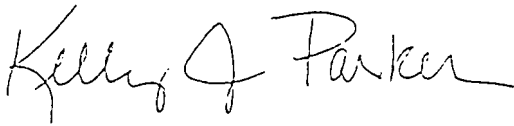
RE: Request for a Waiver of Melting Point  
All Products Listed in the RED  
Case Number and Name: 0030 Methoprene

Dear Mr. Nelson:

Zoecon Corporation respectfully requests a waiver of melting point, Guideline 151E-17(d), for all products subject to the Methoprene Reregistration Eligibility Decision document (see attached).

This requirement is only applicable for technical grade active ingredients that are solid at room temperature. Methoprene is a liquid at room temperature; therefore, this requirement does not apply to any product contained in the Methoprene RED.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Phil Hutton, RD, EPA  
Dick King, SRRD, EPA



## Products

Recon RF-174 Flea Growth Regulator, EPA Reg. No. 2724-286 - Product Specific ID# 2724-RD-7

Recon RF-291 Emulsifiable Concentrate, EPA Reg. No. 2724-352 - Product Specific ID# 2724-RD-25

Abat Tobacco Protector, EPA Reg. No. 2724-377 - Product Specific ID# 2724-RD-34

Abat Tobacco Protector Concentrate, EPA Reg. No. 2724-384 - Product Specific ID# 2724-RD-36

Tosid Liquid Larvicide, EPA Reg. No. 2724-392 - Product Specific ID# 2724-RD-41

Tosid Larvicide Concentrate, EPA Reg. No. 2724-393 - Product Specific ID# 2724-RD-42

Recon RF-299 RTU Carpet Pump Spray, EPA Reg. No. 2724-401 - Product Specific ID# 2724-RD-44

Recon RF-322 Ovicidal Pump Spray, EPA Reg. No. 2724-404 - Product Specific ID# 2724-RD-46

Recon RF-329 Ant Growth Regulator, EPA Reg. No. 2724-420 - Product Specific ID# 2724-RD-48

Recon RF-342 Emulsifiable Concentrate, EPA Reg. No. 2724-427 - Product Specific ID# 2724-RD-50

Methoprene, EPA Reg. No. 2724-441 - Product Specific ID# 2724-RD-56

M-Methoprene Technical, EPA Reg. No. 2724-442 - Product Specific ID# 2724-RD-51

Recon RF-379 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446 - Product Specific ID# 2724-RD-439

Recon RF-274 Fogger, EPA Reg. No. 2724-337 - Product Specific ID# 2724-RD-22

Recon RF-275 Pressurized Spray, EPA Reg. No. 2724-338 - Product Specific ID# 2724-RD-23

Recon RF-280 Aerosol, EPA Reg. No. 2724-339 - Product Specific ID# 2724-RD-24

Recon RF-293 Methoprene Bolus, EPA Reg. No. 2724-356 - Product Specific ID# 2724-RD-26

Recon RF-297 Aerosol, EPA Reg. No. 2724-360 - Product Specific ID# 2724-RD-27

TOSID CP-10, EPA Reg. No. 2724-367 - Product Specific ID# 2724-RD-28

Arbar Block IGR Cattle Supplement, EPA Reg. No. 2724-368 - Product Specific ID# 2724-RD-29

Granular IGR Cattle Supplement, EPA Reg. No. 2724-372 - Product Specific ID# 2724-RD-30

Block IGR Cattle Supplement, EPA Reg. No. 2724-373 - Product Specific ID# 2724-RD-31

TOSID Briquets, EPA Reg. No. 2724-375 - Product Specific ID# 2724-RD-33

Recon RF-292 Briquet, EPA Reg. No. 2724-421 - Product Specific ID# 2724-RD-49

Recon RF-330 ALTOSID Pellets, EPA Reg. No. 2724-448 - Product Specific ID# 2724-RD-52

Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

1 July 1991

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

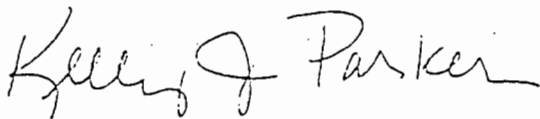
RE: Request for a Waiver of Boiling Point  
All Products Listed in the RED  
Case Number and Name: 0030 Methoprene

Dear Mr. Nelson:

Zoecon Corporation respectfully requests a waiver of boiling point, Guideline 151B-17(e), for all products subject to the Methoprene Reregistration Eligibility Decision document (see attached).

This requirement is only applicable for technical grade active ingredients that are liquid at room temperature. The boiling point for Methoprene can be found in MRID Number 00010927. All other products are end-products and manufacturing-products; therefore, this requirement does not apply to any other product contained in the Methoprene RED.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Phil Hutton, RD, EPA  
Dick King, SRRD, EPA



## Products

econ RF-174 Flea Growth Regulator, EPA Reg. No. 2724-286 - Product Specific  
# 2724-RD-7  
econ RF-291 Emulsifiable Concentrate, EPA Reg. No. 2724-352 - Product Specific ID# 2724-RD-25  
bat Tobacco Protector, EPA Reg. No. 2724-377 - Product Specific ID# 2724-RD-34  
bat Tobacco Protector Concentrate, EPA Reg. No. 2724-384 - Product Specific ID# 2724-RD-36  
osid Liquid Larvicide, EPA Reg. No. 2724-392 - Product Specific ID# 2724-RD-41  
osid Larvicide Concentrate, EPA Reg. No. 2724-393 - Product Specific ID# 2724-RD-42  
econ RF-299 RTU Carpet Pump Spray, EPA Reg. No. 2724-401 - Product Specific ID# 2724-RD-44  
econ RF-322 Ovicidal Pump Spray, EPA Reg. No. 2724-404 - Product Specific ID# 2724-RD-46  
econ RF-329 Ant Growth Regulator, EPA Reg. No. 2724-420 - Product Specific ID# 2724-RD-48  
econ RF-342 Emulsifiable Concentrate, EPA Reg. No. 2724-427 - Product Specific ID# 2724-RD-50  
econ RF-379 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446 - Product Specific  
# 2724-RD-439  
econ RF-274 Fogger, EPA Reg. No. 2724-337 - Product Specific ID# 2724-RD-22  
econ RF-275 Pressurized Spray, EPA Reg. No. 2724-338 - Product Specific ID# 2724-RD-23  
econ RF-280 Aerosol, EPA Reg. No. 2724-339 - Product Specific ID# 2724-RD-24  
econ RF-293 Methoprene Bolus, EPA Reg. No. 2724-356 - Product Specific ID# 2724-RD-26  
econ RF-297 Aerosol, EPA Reg. No. 2724-360 - Product Specific ID# 2724-RD-27  
IOSID CP-10, EPA Reg. No. 2724-367 - Product Specific ID# 2724-RD-28  
arbar Block IGR Cattle Supplement, EPA Reg. No. 2724-368 - Product Specific  
# 2724-RD-29  
anular IGR Cattle Supplement, EPA Reg. No. 2724-372 - Product Specific ID# 2724-RD-30  
ock IGR Cattle Supplement, EPA Reg. No. 2724-373 - Product Specific ID# 2724-RD-31  
IOSID Briquets, EPA Reg. No. 2724-375 - Product Specific ID# 2724-RD-33  
econ RF-292 Briquet, EPA Reg. No. 2724-421 - Product Specific ID# 2724-RD-49  
econ RF-330 ALTOSID Pellets, EPA Reg. No. 2724-448 - Product Specific ID# 2724-RD-52

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1 July 1991

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
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Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

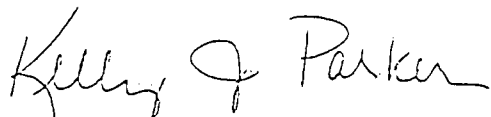
RE: Request for a Waiver of Solubility  
All Products Listed in the RED  
Case Number and Name: 0030 Methoprene

Dear Mr. Nelson:

Zoecon Corporation respectfully requests a waiver of solubility, Guideline 151B-17(g), for all products subject to the Methoprene Reregistration Eligibility Decision document (see attached).

This requirement is only applicable for technical grade active ingredients. The solubility of Methoprene can be found in MRID Number 00010927. All other products are end-products and manufacturing-products; therefore, this requirement does not apply to any other product contained in the Methoprene RED.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Phil Hutton, RD, EPA  
Dick King, SRRD, EPA



## Products

Zoecon RF-174 Flea Growth Regulator, EPA Reg. No. 2724-286 - Product Specific ID# 2724-RD-7

Zoecon RF-291 Emulsifiable Concentrate, EPA Reg. No. 2724-352 - Product Specific ID# 2724-RD-25

Labat Tobacco Protector, EPA Reg. No. 2724-377 - Product Specific ID# 2724-RD-34

Labat Tobacco Protector Concentrate, EPA Reg. No. 2724-384 - Product Specific ID# 2724-RD-36

Altosid Liquid Larvicide, EPA Reg. No. 2724-392 - Product Specific ID# 2724-RD-41

Altosid Larvicide Concentrate, EPA Reg. No. 2724-393 - Product Specific ID# 2724-RD-42

Zoecon RF-299 RTU Carpet Pump Spray, EPA Reg. No. 2724-401 - Product Specific ID# 2724-RD-44

Zoecon RF-322 Ovicidal Pump Spray, EPA Reg. No. 2724-404 - Product Specific ID# 2724-RD-46

Zoecon RF-329 Ant Growth Regulator, EPA Reg. No. 2724-420 - Product Specific ID# 2724-RD-48

Zoecon RF-342 Emulsifiable Concentrate, EPA Reg. No. 2724-427 - Product Specific ID# 2724-RD-50

Zoecon RF-379 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446 - Product Specific ID# 2724-RD-439

Zoecon RF-274 Fogger, EPA Reg. No. 2724-337 - Product Specific ID# 2724-RD-22

Zoecon RF-275 Pressurized Spray, EPA Reg. No. 2724-338 - Product Specific ID# 2724-RD-23

Zoecon RF-280 Aerosol, EPA Reg. No. 2724-339 - Product Specific ID# 2724-RD-24

Zoecon RF-293 Methoprene Bolus, EPA Reg. No. 2724-356 - Product Specific ID# 2724-RD-26

Zoecon RF-297 Aerosol, EPA Reg. No. 2724-360 - Product Specific ID# 2724-RD-27

ALTOSID CP-10, EPA Reg. No. 2724-367 - Product Specific ID# 2724-RD-28

Starbar Block IGR Cattle Supplement, EPA Reg. No. 2724-368 - Product Specific ID# 2724-RD-29

Granular IGR Cattle Supplement, EPA Reg. No. 2724-372 - Product Specific ID# 2724-RD-30

Block IGR Cattle Supplement, EPA Reg. No. 2724-373 - Product Specific ID# 2724-RD-31

ALTOSID Briquets, EPA Reg. No. 2724-375 - Product Specific ID# 2724-RD-33

Zoecon RF-292 Briquet, EPA Reg. No. 2724-421 - Product Specific ID# 2724-RD-49

Zoecon RF-330 ALTOSID Pellets, EPA Reg. No. 2724-448 - Product Specific ID# 2724-RD-52

Zoecon Corporation

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Mr. Willie Nelson  
Product Management Team 18  
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Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

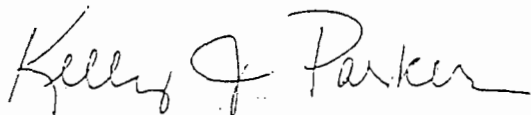
RE: Request for a Waiver of Vapor Pressure  
All Products Listed in the RED  
Case Number and Name: 0030 Methoprene

Dear Mr. Nelson:

Zoecon Corporation respectfully requests a waiver of vapor pressure, Guideline 151B-17(h), for all products subject to the Methoprene Reregistration Eligibility Decision document (see attached).

This requirement is only applicable for active ingredients. The vapor pressure for Methoprene can be found in MRID Number 00010927. All other products are end-products and manufacturing-products; therefore, this requirement does not apply to any other product contained in the Methoprene RED.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Phil Hutton, RD, EPA  
Dick King, SRRD, EPA



## Products

acon RF-174 Flea Growth Regulator, EPA Reg. No. 2724-286 - Product Specific  
# 2724-RD-7

acon RF-291 Emulsifiable Concentrate, EPA Reg. No. 2724-352 - Product Specific ID# 2724-RD-25

bat Tobacco Protector, EPA Reg. No. 2724-377 - Product Specific ID# 2724-RD-34

bat Tobacco Protector Concentrate, EPA Reg. No. 2724-384 - Product Specific ID# 2724-RD-36

osid Liquid Larvicide, EPA Reg. No. 2724-392 - Product Specific ID# 2724-RD-41

osid Larvicide Concentrate, EPA Reg. No. 2724-393 - Product Specific ID# 2724-RD-42

acon RF-299 RTU Carpet Pump Spray, EPA Reg. No. 2724-401 - Product Specific ID# 2724-RD-44

acon RF-322 Ovicidal Pump Spray, EPA Reg. No. 2724-404 - Product Specific ID# 2724-RD-46

acon RF-329 Ant Growth Regulator, EPA Reg. No. 2724-420 - Product Specific ID# 2724-RD-48

acon RF-342 Emulsifiable Concentrate, EPA Reg. No. 2724-427 - Product Specific ID# 2724-RD-50

acon RF-379 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446 - Product Specific  
# 2724-RD-439

acon RF-274 Fogger, EPA Reg. No. 2724-337 - Product Specific ID# 2724-RD-22

acon RF-275 Pressurized Spray, EPA Reg. No. 2724-338 - Product Specific ID# 2724-RD-23

acon RF-280 Aerosol, EPA Reg. No. 2724-339 - Product Specific ID# 2724-RD-24

acon RF-293 Methoprene Bolus, EPA Reg. No. 2724-356 - Product Specific ID# 2724-RD-26

acon RF-297 Aerosol, EPA Reg. No. 2724-360 - Product Specific ID# 2724-RD-27

TOSID CP-10, EPA Reg. No. 2724-367 - Product Specific ID# 2724-RD-28

arbar Block IGR Cattle Supplement, EPA Reg. No. 2724-368 - Product Specific  
# 2724-RD-29

anular IGR Cattle Supplement, EPA Reg. No. 2724-372 - Product Specific ID# 2724-RD-30

ock IGR Cattle Supplement, EPA Reg. No. 2724-373 - Product Specific ID# 2724-RD-31

TOSID Briquets, EPA Reg. No. 2724-375 - Product Specific ID# 2724-RD-33

acon RF-292 Briquet, EPA Reg. No. 2724-421 - Product Specific ID# 2724-RD-49

acon RF-330 ALTOSID Pellets, EPA Reg. No. 2724-448 - Product Specific ID# 2724-RD-52

Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

1 July 1991

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

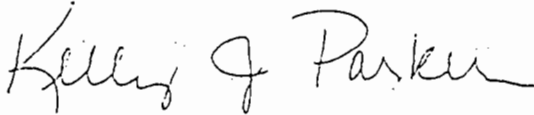
RE: Request for a Waiver of Stability  
All Products Listed in the RED  
Case Number and Name: 0030 Methoprene

Dear Mr. Nelson:

Zoecon Corporation respectfully requests a waiver of stability, Guideline 151B-17(j), for all products subject to the Methoprene Reregistration Eligibility Decision document (see attached).

This requirement is only applicable for technical grade active ingredients. The stability of Methoprene can be found in MRID Number 00010927. All other products are end-products and manufacturing-products; therefore, this requirement does not apply to any product contained in the Methoprene RED.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Phil Hutton, RD, EPA  
Dick King, SRRD, EPA



## Products

econ RF-174 Flea Growth Regulator, EPA Reg. No. 2724-286 - Product Specific ID# 2724-RD-7  
econ RF-291 Emulsifiable Concentrate, EPA Reg. No. 2724-352 - Product Specific ID# 2724-RD-25  
bat Tobacco Protector, EPA Reg. No. 2724-377 - Product Specific ID# 2724-RD-34  
bat Tobacco Protector Concentrate, EPA Reg. No. 2724-384 - Product Specific ID# 2724-RD-36  
osid Liquid Larvicide, EPA Reg. No. 2724-392 - Product Specific ID# 2724-RD-41  
osid Larvicide Concentrate, EPA Reg. No. 2724-393 - Product Specific ID# 2724-RD-42  
econ RF-299 RTU Carpet Pump Spray, EPA Reg. No. 2724-401 - Product Specific ID# 2724-RD-44  
econ RF-322 Ovicidal Pump Spray, EPA Reg. No. 2724-404 - Product Specific ID# 2724-RD-46  
econ RF-329 Ant Growth Regulator, EPA Reg. No. 2724-420 - Product Specific ID# 2724-RD-48  
econ RF-342 Emulsifiable Concentrate, EPA Reg. No. 2724-427 - Product Specific ID# 2724-RD-50  
econ RF-379 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446 - Product Specific ID# 2724-RD-439  
econ RF-274 Fogger, EPA Reg. No. 2724-337 - Product Specific ID# 2724-RD-22  
econ RF-275 Pressurized Spray, EPA Reg. No. 2724-338 - Product Specific ID# 2724-RD-23  
econ RF-280 Aerosol, EPA Reg. No. 2724-339 - Product Specific ID# 2724-RD-24  
econ RF-293 Methoprene Bolus, EPA Reg. No. 2724-356 - Product Specific ID# 2724-RD-26  
econ RF-297 Aerosol, EPA Reg. No. 2724-360 - Product Specific ID# 2724-RD-27  
TOSID CP-10, EPA Reg. No. 2724-367 - Product Specific ID# 2724-RD-28  
arbar Block IGR Cattle Supplement, EPA Reg. No. 2724-368 - Product Specific ID# 2724-RD-29  
anular IGR Cattle Supplement, EPA Reg. No. 2724-372 - Product Specific ID# 2724-RD-30  
ock IGR Cattle Supplement, EPA Reg. No. 2724-373 - Product Specific ID# 2724-RD-31  
TOSID Briquets, EPA Reg. No. 2724-375 - Product Specific ID# 2724-RD-33  
econ RF-292 Briquet, EPA Reg. No. 2724-421 - Product Specific ID# 2724-RD-49  
econ RF-330 ALTOSID Pellets, EPA Reg. No. 2724-448 - Product Specific ID# 2724-RD-52

**Zoecon Corporation**

*A SANDOZ Company*

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

1 July 1991

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

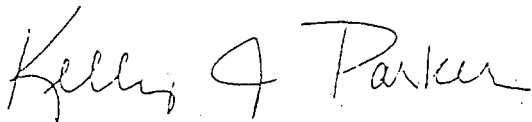
RE: Request for a Waiver of Miscibility  
All Products Listed in the RED  
Case Number and Name: 0030 Methoprene

Dear Mr. Nelson:

Zoecon Corporation respectfully requests a waiver of miscibility, Guideline 151B-17(n), for all products subject to the Methoprene Reregistration Eligibility Decision document (see attached).

This requirement is only applicable for emulsifiable liquids intended to be diluted with petroleum solvents. Although we do have emulsifiable liquids, they are not diluted with petroleum solvents; therefore, this requirement does not apply to any product contained in the Methoprene RED.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Phil Hutton, RD, EPA  
Dick King, SRRD, EPA



## Products

Joecon RF-174 Flea Growth Regulator, EPA Reg. No. 2724-286 - Product Specific ID# 2724-RD-7

Joecon RF-291 Emulsifiable Concentrate, EPA Reg. No. 2724-352 - Product Specific ID# 2724-RD-25

Kabat Tobacco Protector, EPA Reg. No. 2724-377 - Product Specific ID# 2724-RD-34

Kabat Tobacco Protector Concentrate, EPA Reg. No. 2724-384 - Product Specific ID# 2724-RD-36

Altosid Liquid Larvicide, EPA Reg. No. 2724-392 - Product Specific ID# 2724-RD-41

Altosid Larvicide Concentrate, EPA Reg. No. 2724-393 - Product Specific ID# 2724-RD-42

Joecon RF-299 RTU Carpet Pump Spray, EPA Reg. No. 2724-401 - Product Specific ID# 2724-RD-44

Joecon RF-322 Ovicidal Pump Spray, EPA Reg. No. 2724-404 - Product Specific ID# 2724-RD-46

Joecon RF-329 Ant Growth Regulator, EPA Reg. No. 2724-420 - Product Specific ID# 2724-RD-48

Joecon RF-342 Emulsifiable Concentrate, EPA Reg. No. 2724-427 - Product Specific ID# 2724-RD-50

Methoprene, EPA Reg. No. 2724-441 - Product Specific ID# 2724-RD-56

S)-Methoprene Technical, EPA Reg. No. 2724-442 - Product Specific ID# 2724-RD-51

Joecon RF-379 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446 - Product Specific ID# 2724-RD-439

Joecon RF-274 Fogger, EPA Reg. No. 2724-337 - Product Specific ID# 2724-RD-22

Joecon RF-275 Pressurized Spray, EPA Reg. No. 2724-338 - Product Specific ID# 2724-RD-23

Joecon RF-280 Aerosol, EPA Reg. No. 2724-339 - Product Specific ID# 2724-RD-24

Joecon RF-293 Methoprene Bolus, EPA Reg. No. 2724-356 - Product Specific ID# 2724-RD-26

Joecon RF-297 Aerosol, EPA Reg. No. 2724-360 - Product Specific ID# 2724-RD-27

ALTOSID CP-10, EPA Reg. No. 2724-367 - Product Specific ID# 2724-RD-28

Starbar Block IGR Cattle Supplement, EPA Reg. No. 2724-368 - Product Specific ID# 2724-RD-29

Granular IGR Cattle Supplement, EPA Reg. No. 2724-372 - Product Specific ID# 2724-RD-30

Block IGR Cattle Supplement, EPA Reg. No. 2724-373 - Product Specific ID# 2724-RD-31

ALTOSID Briquets, EPA Reg. No. 2724-375 - Product Specific ID# 2724-RD-33

Joecon RF-292 Briquet, EPA Reg. No. 2724-421 - Product Specific ID# 2724-RD-49

Joecon RF-330 ALTOSID Pellets, EPA Reg. No. 2724-448 - Product Specific ID# 2724-RD-52

Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

1 July 1991

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
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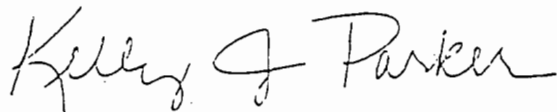
RE: Request for a Waiver of Oct/Water Partition Coefficient Data  
All End-Use Products Listed in the RED  
Case Number and Name: 0030 Methoprene

Dear Mr. Nelson:

Zoecon respectfully requests a waiver of Octanol/Water Partition Coefficient Data, Guideline Number 151B-17(p) for all end-use products subject to the Methoprene Reregistration Eligibility Decision document (see attached).

We understand that this requirement was part of the generic data requirement for the technical grade active ingredient. Data are being generated on the active ingredient and will be submitted by the April 1992 deadline. All other products are end-products and manufacturing-products; therefore, this requirement does not apply to any other product contained in the Methoprene RED.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Phil Hutton, RD, EPA  
Dick King, SRRD, EPA



## Products

Zoecon RF-174 Flea Growth Regulator, EPA Reg. No. 2724-286 - Product Specific ID# 2724-RD-7

Zoecon RF-291 Emulsifiable Concentrate, EPA Reg. No. 2724-352 - Product Specific ID# 2724-RD-25

Kabat Tobacco Protector, EPA Reg. No. 2724-377 - Product Specific ID# 2724-RD-34

Kabat Tobacco Protector Concentrate, EPA Reg. No. 2724-384 - Product Specific ID# 2724-RD-36

Altosid Liquid Larvicide, EPA Reg. No. 2724-392 - Product Specific ID# 2724-RD-41

Altosid Larvicide Concentrate, EPA Reg. No. 2724-393 - Product Specific ID# 2724-RD-42

Zoecon RF-299 RTU Carpet Pump Spray, EPA Reg. No. 2724-401 - Product Specific ID# 2724-RD-44

Zoecon RF-322 Ovicidal Pump Spray, EPA Reg. No. 2724-404 - Product Specific ID# 2724-RD-46

Zoecon RF-329 Ant Growth Regulator, EPA Reg. No. 2724-420 - Product Specific ID# 2724-RD-48

Zoecon RF-342 Emulsifiable Concentrate, EPA Reg. No. 2724-427 - Product Specific ID# 2724-RD-50

Zoecon RF-379 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446 - Product Specific ID# 2724-RD-439

Zoecon RF-274 Fogger, EPA Reg. No. 2724-337 - Product Specific ID# 2724-RD-22

Zoecon RF-275 Pressurized Spray, EPA Reg. No. 2724-338 - Product Specific ID# 2724-RD-23

Zoecon RF-280 Aerosol, EPA Reg. No. 2724-339 - Product Specific ID# 2724-RD-24

Zoecon RF-293 Methoprene Bolus, EPA Reg. No. 2724-356 - Product Specific ID# 2724-RD-26

Zoecon RF-297 Aerosol, EPA Reg. No. 2724-360 - Product Specific ID# 2724-RD-27

ALTOSID CP-10, EPA Reg. No. 2724-367 - Product Specific ID# 2724-RD-28

Starbar Block IGR Cattle Supplement, EPA Reg. No. 2724-368 - Product Specific ID# 2724-RD-29

Granular IGR Cattle Supplement, EPA Reg. No. 2724-372 - Product Specific ID# 2724-RD-30

Block IGR Cattle Supplement, EPA Reg. No. 2724-373 - Product Specific ID# 2724-RD-31

ALTOSID Briquets, EPA Reg. No. 2724-375 - Product Specific ID# 2724-RD-33

Zoecon RF-292 Briquet, EPA Reg. No. 2724-421 - Product Specific ID# 2724-RD-49

Zoecon RF-330 ALTOSID Pellets, EPA Reg. No. 2724-448 - Product Specific ID# 2724-RD-52

Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

1 July 1991

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

RE: Request for a Waiver of Product Performance Data  
Case Number and Name: 0030 Methoprene

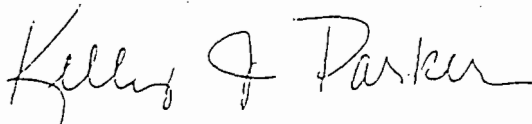
Dear Mr. Nelson:

Zoecon Corporation respectfully requests a waiver of product performance data for the products listed below.

The requirement as listed in the Methoprene RED states that Guideline 95-10(b)(1): product performance for mosquitoes in cesspools, septic tanks, and waste treatment settling ponds should be followed. We will delete these sites from our labels, thus making the requirement not applicable to this product. Revised labels will be submitted prior to the 11/21/91 deadline.

<u>EPA Reg. No.</u>	<u>Product Specific ID#</u>
2724-375	2724-RD-33
2724-392	2724-RD-41
2724-393	2724-RD-42
2724-446	2724-RD-439
2724-448	2724-RD-52
2724-421	2724-RD-49

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Phil Hutton, RD, EPA  
Dick King, SRRD, EPA



Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

20 May 1991

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

RE: Request for an Extension of Storage Stability Data  
Guideline 151B-17(I)  
Product Specific ID# 2724-RD-?? (we didn't receive a response form for this product)  
EPA Reg. No. 2724-446

Dear Mr. Nelson:

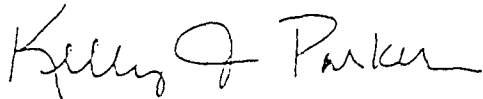
Zoecon Corporation respectfully requests an extension for submission of storage stability data for the subject product. We would like to submit a final report for this study in October 1992.

According to FIFRA as amended in 1988, there is no legislated timeframe for submission of product specific data for List A products (although Lists B, C, and D are subject to the 8 month rule); therefore, the length of our requested extension should pose no regulatory problem. For storage stability studies, EPA currently requires 3 lots, 3 temperatures, and 1 year's worth of GLP data. In the best of circumstances, this is unachievable within 8 months.

According to 40 CFR § 160.29(c), "There shall be a sufficient number of personnel for the timely and proper conduct of the study according to the protocol." Considering all of the GLP storage stability studies required by the Methoprene RED, Zoecon would need to hire 50 more people to conduct the studies, as well as the inherent need to build more stability storage space. I've been told by management that these are not viable options. We have come up with a schedule that would allow Zoecon to comply with the RED by conducting the stability studies in shifts. This will also allow Zoecon to remain in compliance with § 160.29(c) and allow us to use available storage space.

Please let me know as soon as possible whether our request for an extension has been granted.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Phil Hutton, RD, EPA  
Karen Samek, SRRD, EPA

**Zoecon Corporation**

*A SANDOZ Company*

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

10 May 1991

Mr. Willie Nelson  
Product Management Team 18  
U.S. Environmental Protection Agency  
Document Processing Desk (RED/RD-0030)  
Office of Pesticide Programs (H7504C)  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

RE: Request for an Extension of Inhalation Toxicology Data  
Request for a Meeting  
Product Specific ID# 2724-RD-?? (We didn't receive a response form for  
this product; therefore, we can't give you the ID#.)  
EPA Reg. No. 2724-446

Dear Mr. Nelson:

Zoecon Corporation respectfully requests an extension for submission of inhalation toxicology data for the subject product. Further, we would like to meet with individuals within SRRD, RD and HED of EPA who can authorize policy changes with respect to inhalation toxicology.

First of all, the EPA appears to be taking a hard stand on the tox grouping of methoprene products. What was acceptable to the Agency even three years ago appears not acceptable today...especially accepting (R,S)-Methoprene data as relevant to (S)-Methoprene data.

Secondly, we don't understand the absurdness of the required inhalation studies, both what is required to be tested and, most absurd, how it is to be tested. The limit test which meets current guidelines of 5 mg test material/L of air is impossible to achieve when trying to comply with the SEP which requires that at least 25% of the particles must have a MMAD  $\leq 1 \mu$ . The two "requirements" are mutually exclusive. One laboratory has told us that to achieve both requirements, they do two separate limit tests and hope that EPA can merge the results. This means that the lab requires the sponsor to provide a minimum of 5 kg of test material, as 95% of it will be wasted trying to generate such small particles, as well as obtaining maximum chamber concentrations.

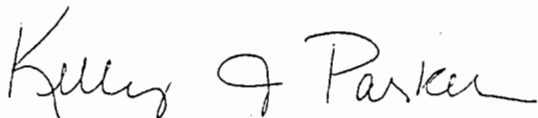


Thirdly, these requirements are cost prohibitive. To generate 5 kg of test material (only for an inhalation toxicology study), could require an unscheduled production run for the active ingredient and/or the end-products. (S)-Methoprene is one of the most expensive active ingredients to manufacture. Two limit studies to reach one conclusion is also costly (our estimate is \$10,000 per limit study, assuming only animal exposure and reduced particle size generation by the laboratory). Analytical costs should also be included in this estimate; however, Zoecon has traditionally conducted the analytical work in-house.

Finally, these requirements are also time prohibitive. The limiting factors include 1) amount of test material required, 2) the chemist's time required to characterize beginning material, to validate the method, and to analyze the chamber samples, 3) laboratory availability (frequently scheduling is required months in advance). Because of the analytical burden of the RED for the product chemistry portion, the analytical work for the inhalation toxicology may be conducted at the inhalation laboratory. This would further increase the time necessary to conduct inhalation studies. All inhalation studies would be conducted at the same laboratory to negate the need for duplicative analytical work. To get on a laboratory master schedule to conduct several studies at once would automatically put us in violation of the 21 November 1991 deadline.

Zoecon requests the time of submission be contingent upon how long it takes EPA to resolve these policy issues. The Society of Toxicology is currently working as a group to suggest changes to this policy; therefore, it seems that this is not only a Zoecon request for a change, but a science- and industry-wide request. We would be happy to set up a room at our hotel to meet with Agency officials. Please let me know when you can schedule this meeting and also if our extension has been granted.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

CC: Anne Lindsay, RD, EPA  
Phil Hutton, RD, EPA  
Karen Samek, SRRD, EPA  
Dr. Penelope Fenner-Crisp, HED, EPA  
Dr. Reto Engler, HED, EPA  
Dr. Judith Graham, R&D, EPA (Research Triangle)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



APR 05 1993

Ms. Kelly Parker  
Regulatory Specialist  
A Sandoz Company  
12200 Denton Drive  
Dallas, TX 75234

Dear Ms. Parker:

Subject: The Agency's Response to your Response to the  
(March 21, 1991), Methoprene Reregistration Eligibility  
Document (RED) 90-Day Data Call-In, and Your Various  
Requests

We have completed our reviews of your waiver requests and  
time extensions in response to the RED, and our answers,  
involving the products listed below, are as follows:

EPA Reg. No.'s: 2724-337, 2724-338, 2724-352, 2724-375,  
2724-377, 2724-384, 2724-393, 2724-420,  
2724-421, 2724-427, 2724-441, 2724-442,  
-2724-446, 2724-448.

This letter is a composite response to your requests, and as  
such, the order of response is not necessarily in the order of  
the products listed above; instead, the order of response is in  
accordance to the presumed importance of the issues involved.

1. Two of the product listed (EPA Reg. No.'s: 2724-441 and  
2724-442) are technical grade products. The Agency has  
determined that it does not need any additional data for these  
technical grade Methoprene products (Reference-Methoprene RED);  
therefore, these products are reregistrable. Please find the  
reregistrations for these two products enclosed and stamped  
copies of the labeling for your records.

2. Zoecon requested a time extension for submitting an inhalation study for each of the products listed below. Also requested was a decision on the Agency's interpretation of existing Agency inhalation testing methodology. Our responses to each of these requests are as follows:

The products involved are as follows: EPA Reg. No.'s: 2724-337, 2724-338, 2724-352, 2724-393, 274-427, 2724-446 and 2724-446.

A. Agency's Response to Time Extension Request: A time extension of 8-months for submitting the inhalation study on each of these products involved is granted, starting with the stamped date of this letter. The bases for granted this time extension is due to the fact that Zoecon had difficulty in finding the availability of a laboratory to do the test.

B. Current Agency Inhalation Testing Methodology: Please find in the attached scientific review (dated September 21, 1992) from the Precautionary Review Section, at Section II of this review, the Agency's currently recommended inhalation testing methodology.

3. Zoecon also submitted to the Agency two types of waiver requests involving (5) five products which are addressed as follows:

A. A waiver request was made by Zoecon for all acute toxicity studies based on data previously reviewed by the Agency and availability of information in the scientific literature. The products involved are EPA 2724-377 and EPA 2724-384.

B. Agency's Response: Your request for acute toxicity data waiver for products: EPA 2724-377 and EPA 2724-384 is denied; because, the Agency does not have an adequate data base for mixture-formulations for Methoprene, and the acute toxicity data base for the straight chemical formulations can not be applied to mixture-formulations of Methoprene.

C. The second waiver request for acute toxicity data waiver was made based on valid data previously reviewed by the Agency and product formulation, physical characteristics, and use patterns. The products involved are: EPA Reg. No's: 2724-375 (briquette), 2724-421 (briquette), and 2724-488 (pellet).



D. Agency Response: We are only granting the waiver for the inhalation studies based on formulation, physical characteristics, and use patterns. The anticipated human inhalation exposure and toxicity potential from these products (briquettes and pellets) would be expected to be insignificant. Here again, we are denying the waiver request for the acute toxicity data for these types of products. The Agency has no acute toxicity data base for products containing a mixture of Methoprene and other chemicals; therefore, these data are needed in order to be able to make the necessary precautionary labeling assessments.

#### LABELING LANGUAGE FOR MANUFACTURING-USE PRODUCTS CONTAINING METHOPRENE

1. The labels and labeling of all products must comply with EPA's current regulations and requirements. Follow the instructions in the Product Reregistration Handbook with respect to labels and labeling.

2. Based on the reviews of the generic data, the following additional label statements are required.

"Formulators using this product are responsible for obtaining EPA registration for their formulated products."

3. In the "Directions For Use," the following statement regarding acceptable use patterns must appear on the product labeling: "For formulating into end-use products intended only for (list acceptable sites)."

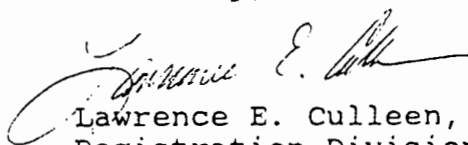
4. In the Environmental Hazard Section of the product labeling, must appear the following statement:

"Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or public waters unless this product is specifically identified and addressed in an NODES permit. Do not discharge effluent containing this product into sewer systems without previously notifying the sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA".

-4-

Should you have need for further assistance, or have questions relative to the issues discussed in this letter, please feel free to contact Mr. Willie H. Nelson, of PM-Team 18, at (703) 305-6601.

Sincerely,

A handwritten signature in dark ink, appearing to read "Lawrence E. Culleen", with a stylized flourish at the end.

Lawrence E. Culleen, Acting Director  
Registration Division



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

SEP 21 1992

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

Subject: Registrant Response To The Methoprene RED 90-Day DCI: Data Waivers And Time Extension Requests. The products involved are as follows:

EPA 2724-337  
EPA 2724-338  
EPA 2724-352  
EPA 2724-375  
EPA 2724-377  
EPA 2724-384  
EPA 2724-393  
EPA 2724-420  
EPA 2724-421  
EPA 2724-427  
EPA 2724-441  
EPA 2724-442  
EPA 2724-446  
EPA 2724-448

To: Phil Hutton (PM 18)  
Attn: Willie Nelson  
Insecticide & Rodenticide Br.  
Registration Division (H7505C)

From: Van M. Seabaugh *OMS 9-21-92*  
Precautionary Review Section  
Registration Support Br.  
Registration Division (H7505C)

Thru: Thomas Ellwanger, Jr. *Thomas C. Ellwanger*  
Head, Precautionary Review Section  
Registration Support Br.  
Registration Division (H7505C)

Request

Respond to the registrant's response to the methoprene Reregistration Eligibility Document (RED) 90-day Data Call In (DCI).



Response

I. Submitted to the Agency are two types of waiver requests involving five products.

1. A waiver is requested by the registrant for all acute toxicity studies based on data previously reviewed by the Agency and available in the scientific literature. The products involved are EPA 2724-377 and EPA 2724-384.

PRS Response: We recommend that the waiver request be denied.

In the methoprene RED (March 1991), it is stated that the Agency needs no additional acute toxicity data for methoprene (technical): oral toxicity (Toxicity Category IV); dermal toxicity (Toxicity Category III); inhalation toxicity (Toxicity Category IV); eye irritation (Toxicity Category IV); dermal irritation (Toxicity Category IV); hypersensitivity - a) A guinea pig test using intradermal injections of undiluted test material indicated a positive response. b) Another group of guinea pigs received a topical application, and the results indicated a negative response. c) In addition, the data indicated that methoprene is not a skin sensitizer when humans were tested.

Acute toxicity data are available for methoprene (technical), but the data for the straight chemical cannot be applied to a mixture of chemicals. It becomes a guesstimate to predict the outcome without testing the mixture.

2. A waiver is requested by the registrant for all acute toxicity studies based on valid data previously reviewed by the Agency and product formulation, physical characteristics, and use patterns. The products involved are EPA 2724-375 (briquet), EPA 2724-421 (briquet), and EPA 2724-448 (pellet).

PRS Response

The PRS recommends that a waiver be granted for only the inhalation studies based on formulations, physical characteristics, and use patterns. Anticipated human inhalation exposure and toxicity potential from these products (briquets and pellets) would be expected to be insignificant. However, the PRS recommends denial of the request for the other acute toxicity waivers, because the products have no acute toxicity data for the mixtures. Data are needed for precautionary labeling.

II. A time extension is requested for submitting an inhalation study for each product involved. Also wanted is a decision on interpretation of existing Agency inhalation testing methodology.

The products involved are as follows: EPA 2724-337, EPA 2724-338, EPA 2724-352, EPA 2724-393, EPA 2724-427, EPA 2724-446, EPA 2724-420.

PRS Response: We recommend that a time extension of 8 months be granted minus the time of the registrant's response to the RED DCI.

A meeting involving personnel from the Registration and Health Effects Divisions decided on an interim regulatory position for inhalation testing until the FIFRA Guidelines are revised. Guidance for conducting an acute inhalation toxicity study requires the end-points of 5 mg/L concentration (for a limit test) with particle sizes of 1  $\mu$ m mass median aerodynamic diameter (MMAD) or 25% of particles  $\leq$  1  $\mu$ m. For some end-use pesticide products, both of these end-points cannot be met in the same study, and prove to be mutually exclusive. Insistence on the above particle size requirements has been relaxed. Particles with a MMAD  $\leq$  4  $\mu$ m are considered appropriate for acute inhalation toxicity testing of rats. It is felt with the larger particle sizes allowed that most end-use products will be able to fulfill both particle size and concentration end-points and result in an acceptable acute inhalation toxicity study. Upon demonstration that both end-points cannot be attained, emphasis in testing should be placed on attaining the limit concentration using the smallest particle size which will allow attainment of the limit concentration. If the particle sizes at this point are still too large to be respirable, the study will be considered an inhalation hazard test rather than an acute inhalation toxicity test. Demonstration that both end-points cannot be attained may be accomplished without exposure of animals, but efforts to reduce particle size and attain concentrations must be described in detail and submitted along with the results of the hazard test.

III. Two of the sixteen products involved are technicals (EPA 2724-441, EPA 2724-442).

PRS Response: The Agency does not need any additional acute toxicity data for methoprene technical (reference - methoprene RED).

cc: William Burnam (HED)  
Karl Baetcke (HED)  
Penelolpe Fenner-Crisp (HED)  
Marcia Van Gemert (HED)

# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

Prevents Emergence of  
Adult Floodwater Mosquitoes

## ACTIVE INGREDIENT:

(S)-Methoprene [Isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-  
dodecadienoate]..... 20%

INERT INGREDIENTS:..... 80%

Contains 1.72 lb/gal (205.2 g/liter) active ingredient

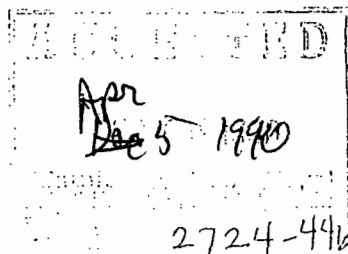
KEEP OUT OF REACH OF CHILDREN

## CAUTION

See Back Panel For Additional Cautions

Because of the unique mode of action of Zoecon RF-379 Mosquito Growth Regulator SR-20, successful use requires familiarity with special techniques recommended for application timing and treatment evaluation. See Guide to Product Application or consult local Mosquito Abatement Agency.

NET CONTENTS:



## PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS - CAUTION: Causes moderate eye irritation. Avoid contact with clothing. Wash thoroughly with soap and water after handling.

DIRECTIONS FOR USE: It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Instructions for Use -- 1. SHAKE WELL BEFORE USING. Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution. 2. Do not mix with oil; use clean equipment. 3. Partially fill spray tank with water, then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable. 4. Spray solution should be used within 48 hours. Always agitate before spraying.

RECOMMENDED APPLICATIONS -- Introduction: Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

Methods of Application -- Aerial: Use the recommended amount of Zoecon RF-379 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

Ground: Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-379 in the appropriate volume of water to give the rate per acre recommended below.

Application Rate: Apply 3/4 to 1 fl.oz. of Zoecon RF-379 per acre (55 to 73 ml/hectare) in water as directed.

Application Sites -- Pastures: Zoecon RF-379 may be applied after each flooding without removal of grazing livestock.

Rice: Zoecon RF-379 must be applied to 2nd, 3rd and/or 4th instar larvae of mosquitoes found in rice, usually within 4 days after flooding. Use only where multiple flooding rice culture is practiced. Zoecon RF-379 treatment may be repeated with each flooding. Do not apply after rice reaches the heading stage of growth.

Intermittently Flooded Monocrop Areas: Zoecon RF-379 may be applied as directed above when flooding may result in floodwater mosquito hatch. Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions. Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level.

Dense vegetation or canopy areas: Apply a Zoecon RF-379 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

Mixing and Handling Instructions: 1. Add measured amount of Zoecon RF-379 to spray tank partially filled with water, mix and complete filling with recommended quantity of water. 2. Use diluted spray solution within 48 hours of mixing. Agitate before each use.

STORAGE & DISPOSAL: Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer to recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-446  
U.S. Pats. 3,904,662; 3,912,815  
0590-B-0145E

EPA Est  
c 1989 Zoecon  
Made in U.S.A. 44



## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-379, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-379 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides.

Zoecon RF-379 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-379 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides.

After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive.

Because the effect of Zoecon RF-379 is neither death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

### CHECKLIST

Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

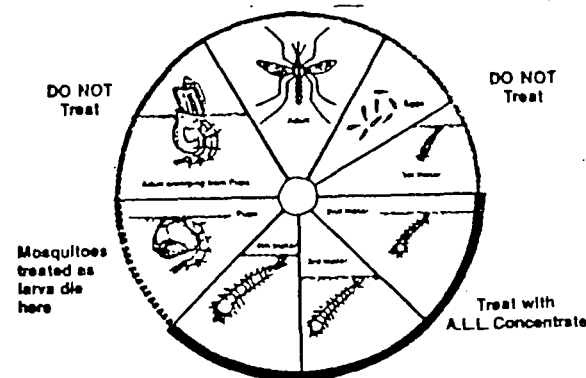
DO the following:

1. DO treat second, third and/or fourth larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas, they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

## LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20



### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredients reach the water where they are released from the sand. ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100-pound batch of ALTOSAND:

- 99 lbs. washed, dry sand (20-45 mesh)
- 0.5 lbs. Zoecon RF-379, (7.5 fluid oz.)
- 0.5 lbs. Hissil 233 (silicon dioxide)
- Small funnel
- Cement mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer place 99 pounds of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 pound (7.5 fluid ounces) Zoecon RF-379, onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379, (usually five to ten minutes).
4. Stop the mixer and add 0.5 pound of Hissil 233. Cover the mixture to reduce dust. Start the mixer and run for approximately five minutes. (The quantity of Hissil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture on the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in step No. 1. Add more Hissil if it flows significantly slower and reduce the amount of Hissil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of eight to ten pounds of the final mixture per acre using standard granular dispersal equipment.

# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

Prevents Emergence of  
Adult Floodwater Mosquitoes

## ACTIVE INGREDIENT:

(S)-Methoprene [Isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-  
dodecadienoate]..... 20%

INERT INGREDIENTS:..... 80%

Contains 1.72 lb/gal (205.2 g/liter) active ingredient

KEEP OUT OF REACH OF CHILDREN

## CAUTION

See Back Panel For Additional Cautions

Because of the unique mode of action of Zoecon RF-379 Mosquito Growth Regulator SR-20, successful use requires familiarity with special techniques recommended for application timing and treatment evaluation. See Guide to Product Application or consult local Mosquito Abatement Agency.

NET CONTENTS :

APPROVED BY  
REGULATORY

MAY 22 1990

SIGNED: *L Wood*

## PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**Instructions for Use -- 1. SHAKE WELL BEFORE USING.** Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution. 2. Do not mix with oil; use clean equipment. 3. Partially fill spray tank with water, then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable. 4. Spray solution should be used within 48 hours. Always agitate before spraying.

**RECOMMENDED APPLICATIONS -- Introduction:** Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

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**Application Sites -- Pastures:** Zoecon RF-379 may be applied after each flooding without removal of grazing livestock.

**Rice:** Zoecon RF-379 must be applied to 2nd, 3rd and/or 4th instar larvae of mosquitoes found in rice, usually within 4 days after flooding. Use only where multiple flooding rice culture is practiced. Zoecon RF-379 treatment may be repeated with each flooding. Do not apply after rice reaches the heading stage of growth.

**Intermittently Flooded Noncrop Areas:** Zoecon RF-379 may be applied as directed above when flooding may result in floodwater mosquito hatch. Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions. Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-379 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**Mixing and Handling Instructions:** 1. Add measured amount of Zoecon RF-379 to spray tank partially filled with water, mix and complete filling with recommended quantity of water. 2. Use diluted spray solution within 48 hours of mixing. Agitate before each use.

**STORAGE & DISPOSAL:** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer to recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-446  
U.S. Pats. 3,904,662; 3,912,815  
0590-B-0145E

EPA Est  
c 1989 Zoecon  
Made in U.S.A.

## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-379, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-379 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides.

Zoecon RF-379 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-379 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides.

After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive.

Because the effect of Zoecon RF-379 is neither death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

### CHECKLIST

Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

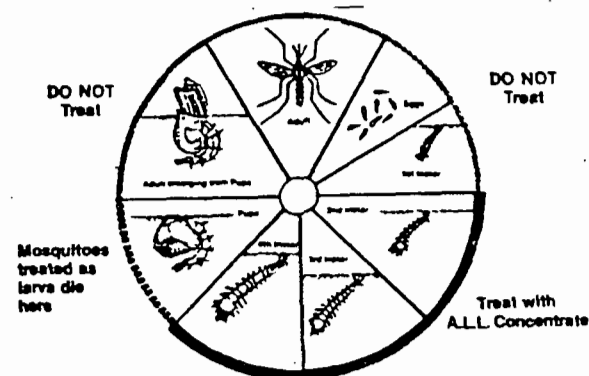
DO the following:

1. DO treat second, third and/or fourth larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

## LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20



### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredients reach the water where they are released from the sand. ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100-pound batch of ALTOSAND:

- 99 lbs. washed, dry sand (20-45 mesh)
- 0.5 lbs. Zoecon RF-379, (7.5 fluid oz.)
- 0.5 lbs. Hissil 233 (silicon dioxide)
- Small funnel
- Cement mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer place 99 pounds of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 pound (7.5 fluid ounces) Zoecon RF-379, onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379, (usually five to ten minutes).
4. Stop the mixer and add 0.5 pound of Hissil 233. Cover the mixture to reduce dust. Start the mixer and run for approximately five minutes. (The quantity of Hissil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture on the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in step No. 1. Add more Hissil if it flows significantly slower and reduce the amount of Hissil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of eight to ten pounds of the final mixture per acre using standard granular dispersal equipment.



# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

Prevents Emergence of  
Adult Floodwater Mosquitoes

## ACTIVE INGREDIENT:

(S)-Methoprene [isopropyl (2E, 4E, 7S)-  
11-methoxy-3, 7, 11-trimethyl-2, 4-

dodecadienoate]..... 20%  
INERT INGREDIENTS:..... 80%

Contains 1.72 lb/gal (205.2 g/liter) active ingredient.

KEEP OUT OF REACH OF CHILDREN

## CAUTION

See Back Panel For Additional Cautions

Because of the unique mode of action of Zoecon RF-379 Mosquito Growth Regulator SR-20, successful use requires familiarity with special techniques recommended for application timing and treatment evaluation. See Guide to Product Application or consult local Mosquito Abatement Agency.

NET CONTENTS :

APPROVED BY  
REGULATORY

DEC 05 1990

2724-446  
SIGNED: *[Signature]*

## PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS - CAUTION: Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

DIRECTIONS FOR USE: It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Instructions for Use -- 1. SHAKE WELL BEFORE USING. Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution. 2. Do not mix with oil; use clean equipment. 3. Partially fill spray tank with water, then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable. 4. Spray solution should be used within 48 hours. Always agitate before spraying.

RECOMMENDED APPLICATIONS -- Introduction: Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

Methods of Application -- Aerial: Use the recommended amount of Zoecon RF-379 listed below in sufficient water to give complete coverage. One-half to 3 gals. of spray solution per acre is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

Ground: Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-379 in the appropriate volume of water to give the rate per acre recommended below.

Application Rate: Apply 3/4 to 1 fl.oz. of Zoecon RF-379 per acre (55 to 73 ml/hectare) in water as directed.

Application Sites -- Pastures: Zoecon RF-379 may be applied after each flooding without removal of grazing livestock.

Rice: Zoecon RF-379 must be applied to 2nd, 3rd and/or 4th instar larvae of mosquitoes found in rice, usually within 4 days after flooding. Use only where multiple flooding rice culture is practiced. Zoecon RF-379 treatment may be repeated with each flooding. Do not apply after rice reaches the heading stage of growth.

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Dense vegetation or canopy areas: Apply a Zoecon RF-379 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

Mixing and Handling Instructions: 1. Add measured amount of Zoecon RF-379 to spray tank partially filled with water, mix and complete filling with recommended quantity of water. 2. Use diluted spray solution within 48 hours of mixing. Agitate before each use.

STORAGE & DISPOSAL: Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer to recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

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## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

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Because the effect of Zoecon RF-379 is neither death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

### CHECKLIST

Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

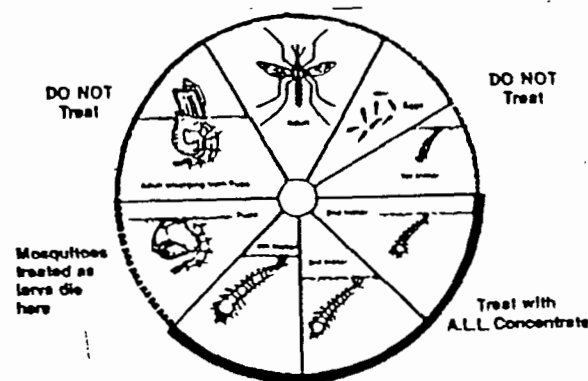
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3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

## LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20



### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredients reach the water where they are released from the sand. ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100-pound batch of ALTOSAND:

- 99 lbs. washed, dry sand (20-45 mesh)
- 0.5 lbs. Zoecon RF-379, (7.5 fluid oz.)
- 0.5 lbs. Hissil 233 (silicon dioxide)
- Small funnel
- Cement mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer place 99 pounds of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 pound (7.5 fluid ounces) Zoecon RF-379, onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379, (usually five to ten minutes).
4. Stop the mixer and add 0.5 pound of Hissil 233. Cover the mixture to reduce dust. Start the mixer and run for approximately five minutes. (The quantity of Hissil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture on the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in step No. 1. Add more Hissil if it flows significantly slower and reduce the amount of Hissil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of eight to ten pounds of the final mixture per acre using standard granular dispersal equipment.

6(a)(2)  
DATA





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

APR 10 1992

OFFICE OF  
PESTICIDES AND TOXIC  
SUBSTANCES

Ms. Kelly J. Parker  
Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, TX 75234

Dear Ms. Parker:

Subject: Information Submitted Under FIFRA Section 6(A)(2)  
Acute Toxicity Data  
Methoprene  
Caswell No. 28AAA  
EPA Nos. 2724-441, 2724-401, 2724-446, 2724-352  
2724-286, 2724-360, 2724-392, 2724-404, 2724-372,  
55947-88, 2724-421, 2724-373, 2724-448, 2724-339,  
2724-377, 2724-420

This will acknowledge receipt of the subject report referred to above, submitted in connection with Section 6(A)(2) of the Federal insecticide, Fungicide, and Rodenticide Act, as amended.

We have reviewed the 6(A)(2) data submitted under the above registration numbers and our findings/recommendations are as follows:

1. The acute toxicity studies submitted by Zoecon are acceptable. All studies were graded Core-Guideline data.
2. Add the following statements under the labeling heading "Precautionary Labeling":


" Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals."



We will include this information in our Methoprene file for future references.

Should you need further assistance or have questions relative to these products, please contact Mr. Phil Hutton or Mr. Willie Nelson, PM-18, at (703) 305-6601.

Sincerely,

  
for Anne E. Lindsay, Director  
Registration Division

**Zoecon Corporation**

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

25 November 1991

Mr. Phil Hutton  
Product Manager 18  
Insecticide-Rodenticide Branch  
Office of Pesticide Programs (H7504C)  
Document Processing Desk (6(a)(2))  
Room 266A, Crystal Mall 2  
U.S. Environmental Protection Agency  
1921 Jefferson Davis Highway  
Arlington, VA 22202

RE: Adverse Effects Discovered In Toxicology Data

Dear Mr. Hutton:

The following studies were submitted in accordance with the R.E.D. for Methoprene. These studies had surprising results; hence, considered by EPA to be adverse effects. Please note that we have not seen confirmation of these results from product use in the marketplace.

Schindler, J.E. and Baldwin, R.C. Zoecon Sample No. R174 SAN 800 I 66EC:  
Primary Skin Irritation Study in Rabbits. SRI Study No. LSC 2673-M029-91.  
Zoecon Study No. 1730. Unpublished. 40 Pages. (See note 1.)

Results: The 72-hour mean irritation score was 1.0 placing this product in Tox Category IV; however, 2 rabbits showed irritation through 21 days after patch removal.

Schindler, J.E. and Baldwin, R.C. Zoecon Sample No. R174 SAN 800 I 66EC:  
Skin Sensitization Study in Guinea Pigs. SRI Study No. LSC 2673-M031-91.  
Zoecon Study No. 1732. Unpublished. 60 Pages. (See note 1.)

Results: This study showed a positive response.

Schindler, J.E. and Baldwin, R.C. Zoecon Sample No. R297 ZOE 014 I 47AE:  
Primary Skin Irritation Study in Rabbits. SRI Study No. LSC 2561-M010-91.  
Zoecon Study No. 1677. Unpublished. 42 Pages. (See note 2.)

Results: The 72-hour mean irritation score was 3.8 placing this product in Tox Category III; however, 2 rabbits showed irritation to 21 days after patch removal.



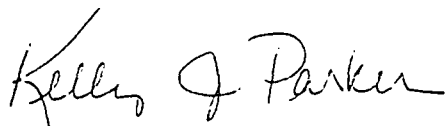
Schindler, J.E. and Baldwin, R.C. Zoecon Sample No. R437N SAN 810 I 20CS:  
Skin Sensitization Study in Guinea Pigs. SRI International. SRI Study No.  
LSC 2673-M036-91. Zoecon Study No. 1737. Unpublished. 54 Pages. (See note  
3.)

Results: This study showed a positive response.

Notes:

1. Zoecon Sample No. R174 SAN 800 I 66EC is the test material code for EPA Registration Numbers 2724-286 and 55947-88 (Under separate cover, Sandoz Crop Protection Corporation has certified Zoecon Corporation as their agent for this product pending transfer completion).
2. Zoecon Sample No. R297 ZOE 014 I .47 AE is the test material code for EPA Registration Number 2724-360.
3. Zoecon Sample No. R437N SAN 810 I 20CS is the test material code for EPA Registration Numbers 2724-393, and 2724-446.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

XC with Data: Mr. Gary Sprock  
Registration Specialist  
Department of Pesticide Regulation  
California Environmental Protection Agency  
1220 N Street  
Sacramento, CA 95814

**Zoecon Corporation**

*A SANDOZ Company*

19 August 1991

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

Mr. Phil Hutton  
Product Manager (18)  
Insecticide-Rodenticide Branch  
Registration Division (H7505C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall, Bldg. 2  
1921 Jefferson Davis Hwy.  
Arlington, VA 22202

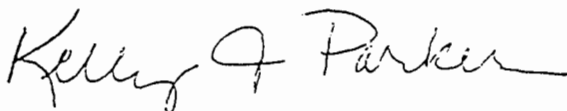
RE: ALTOSID Liquid Larvicide, EPA Reg. No. 2724-392  
Zoecon RF-437 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446 (a.k.a. Zoecon  
RF-379 Mosquito Growth Regulator SR-20)

Dear Mr. Hutton:

Enclosed are labels from which we have removed one sentence under the heading "Intermittently Flooded Noncrop Areas" The sentence, "Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level" is in error in that it instructs the user to apply the product above high tide level. Floodwater mosquito larvae are found in areas between the low tide water line and the high tide water line.

This sentence is not relevant to the directions for use. Users of this product are familiar with floodwater mosquito treatments and this direction is out of line with common industry practice. I've enclosed labels for the other mosquito control products on the market for your reference.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

EPA Form 8570-1 (Rev. 12-90) Previous editions are obsolete. White - EPA File Copy (original) Yellow - Applicant copy



# ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20

## PREVENTS EMERGENCE OF ADULT FLOODWATER MOSQUITOES

Prevents emergence of adult fleas up to 8 weeks outdoors  
Controls pre-adult fleas (larvae) up to 8 weeks  
Biorational [approach to] flea control outdoors

### ACTIVE INGREDIENT:

(S)-Methoprene [Isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-

dodecadienoate]..... 20.0%  
INERT INGREDIENTS:..... 80.0%

Formulation contains 1.72 lb/gal (205.2 g/l) active ingredient

KEEP OUT OF REACH OF CHILDREN

## CAUTION

See Back Panel For Additional Precautionary Statements

BECAUSE OF THE UNIQUE MODE OF ACTION OF ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20, SUCCESSFUL USE REQUIRES FAMILIARITY WITH SPECIAL TECHNIQUES RECOMMENDED FOR APPLICATION TIMING AND TREATMENT EVALUATION. SEE GUIDE TO PRODUCT APPLICATION OR CONSULT LOCAL MOSQUITO ABATEMENT AGENCY.

## NET CONTENTS:

### PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**RECOMMENDED APPLICATIONS - Introduction:** Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-437 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

**METHODS OF APPLICATION - Aerial:** Use the recommended amount of Zoecon RF-437 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre (4.7-46.8 liters/hectare) is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-437 in the appropriate volume of water to give the rate per acre recommended below.

**APPLICATION RATE:** Apply 3/4 to 1 fl.oz. of Zoecon RF-437 per acre (55 to 73 ml/hectare) in water as directed.

**For Fleas:** Apply 1 fluid ounce of RF-437 per 1000 square feet in water as directed.

### MIXING AND HANDLING INSTRUCTIONS:

1. **SHAKE WELL BEFORE USING.** Zoecon RF-437 may separate on standing and must be thoroughly agitated prior to dilution.
2. Do not mix with oil; use clean equipment.
3. Partially fill spray tank with water; then add the recommended amount of Zoecon RF-437, agitate and complete filling. Mild agitation during application is desirable.
4. Spray solution should be used within 48 hours; always agitate before spraying.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-437 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**APPLICATION SITES - Intermittently Flooded Noncrop Areas:** Zoecon RF-437 may be applied as directed above when flooding may result in floodwater mosquito hatch.

Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions.

**Crop Areas:** RF-437 may be applied to irrigated croplands after flooding to control mosquito emergence. Examples of such sites are vineyards, rice fields (including wild rice), date palm orchards, fruit and nut orchards and berry fields and bogs. Irrigated pastures may be treated after each flooding without removal of livestock.

**CHEMIGATION:** Refer to supplemental labeling entitled "Guide to Product Application" for use directions for chemigation. Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed.

**TANK MIXING INSTRUCTIONS:** RF-437 may be tank mixed with liquid *Bacillus thuringiensis* variety *israelensis* (B.t.i.) formulations, such as **TEKNAR HP-D** (or its equivalent). The ratio of **TEKNAR HP-D** to RF-437 should range from 24:1 to 50:1 (volume/volume). For example, to prepare a 50:1 tank mix, add 1 gallon of RF-437 to 50 gallons of B.t.i. This tank mix can be applied to sites listed above at rates of 2-16 fluid ounces/acre (0.15-1.2 liters/hectare).

**For Fleas Outdoors:** Apply 1 ounce of RF-437 in 20 gallons water to every 1000 square feet of residential turf. Pay particular attention to areas where pets frequent, such as, in and around dog houses and runs, and around shrubs, outside decks, and porches.

When using a hose-end sprayer, place required amount of RF-437 in bottle, add at least an equal amount of water and apply at low pressure, making sure to apply at 1 ounce of RF-437 per 20 gallons of water.

A conventional adulticide labeled for outdoor flea control (such as Yardex) should be used with RF-437 if a large population of fleas is present.

**STORAGE & DISPOSAL:** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

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EPA Reg. No. 2724-446  
U.S. Pats. 3,904,662; 3,912,815  
0891-D:0145E

EPA Est  
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# ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20

PREVENTS EMERGENCE OF ADULT FLOODWATER MOSQUITOES

## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-437 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-437, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-437 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides. Zoecon RF-437 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-437 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides. After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive. Because the effect of Zoecon RF-437 is neither larval death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

The information presented herein, while not guaranteed, is to the best of our knowledge true and accurate. No warranty or guarantee, express or implied, is made regarding the performance or stability of any product, since the manner of use and conditions of storage and handling are beyond our control.

0591-C:0192E

### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-437 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-437, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredient reaches the water where it is released from the sand.

ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100 lb. batch of ALTOSAND:

99 lbs. washed, dry sand (20-45 mesh)  
0.5 lbs. Zoecon RF-437 (7.5 fluid oz./lb.)  
0.5 lbs. HiSil 233 (silicon dioxide)  
Small Funnel  
Cement Mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer, place 99 lbs. of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 lbs. (7.5 fl.oz.) of Zoecon RF-437 onto the sand. (If better wetting is required, Zoecon RF-437 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-437 (usually 5 to 10 minutes).
4. Stop the mixer and add 0.5 lbs. of HiSil 233. Cover the mixer to reduce dust. Start the mixer and run for approximately 5 minutes. (The quantity of HiSil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture of the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in Step No. 1. Add more HiSil if it flows significantly slower and reduce the amount of HiSil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of 8 to 10 lbs. of the final mixture per acre, using standard granular dispersal equipment.

### CHECK LIST

Things to remember when using Zoecon RF-437 Mosquito Growth Regulator SR-20

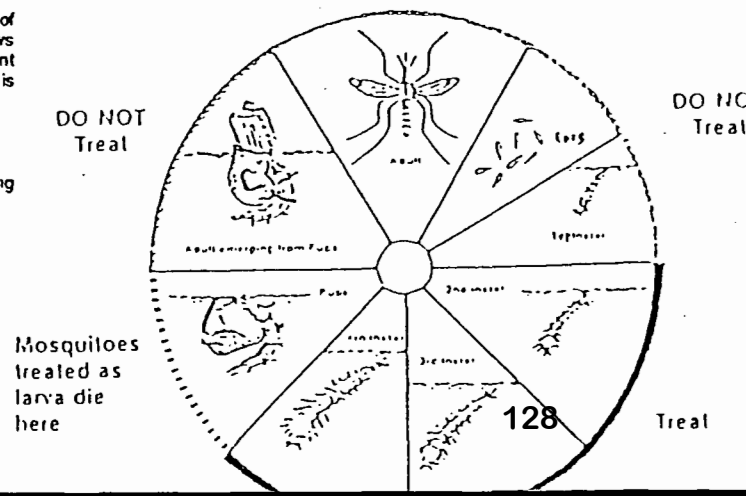
DO the following:

1. DO treat second, third and/or fourth instar larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-437 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-437 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-437 can only be measured by lack of adult emergence.

### LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20



**Chemigation:** Apply this product only through flood (basin), furrow or border irrigation systems. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

**Flood (Basin), Furrow and Border Chemigation:** Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.

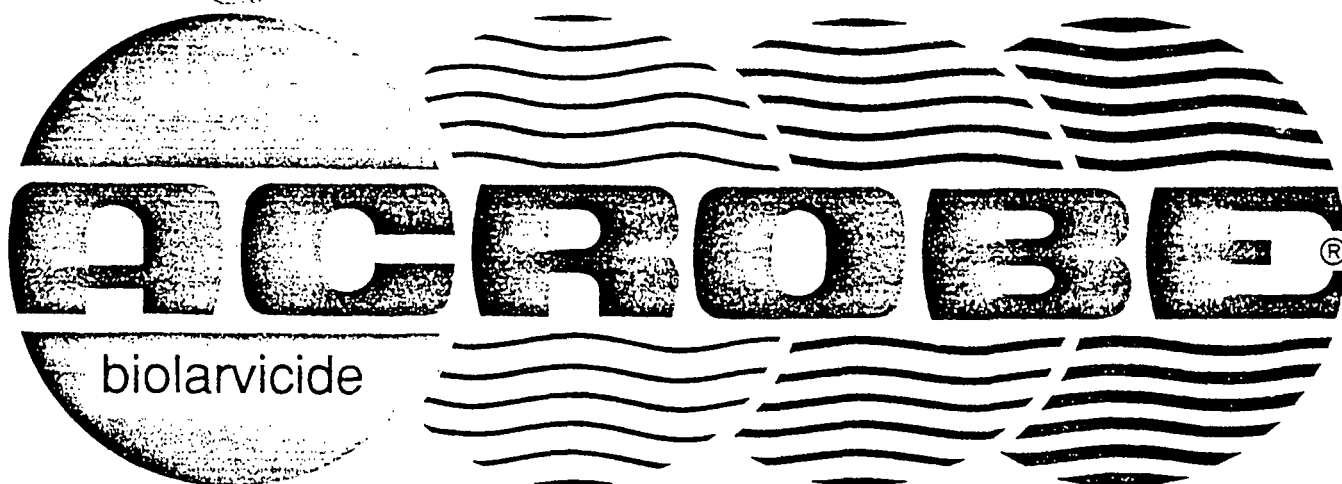
Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where the pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

A pesticide supply tank is recommended for the application of product by chemigation.

Apply product continuously for the duration of water application.





## High Potency Biological Larvicide Aqueous Suspension

SPECIMEN

ACROBE is a highly selective microbial insecticide effective against mosquitoes and blackflies in a variety of habitats.

ACTIVE INGREDIENT: <i>Bacillus thuringiensis</i> var. <i>israelensis</i> , 1200 International Units (ITU) per milligram*	1.2%
INERT INGREDIENTS	98.8%
TOTAL	100.0%

\*Equivalent to 4.84 billion ITU/gallon (1.28 billion ITU/liter).

EPA Reg. No. 62637-1-241

KEEP OUT OF REACH OF CHILDREN  
CAUTION/PRECAUCION

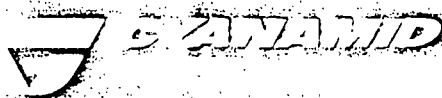
PRECAUCION AL USUARIO: Si usted no lee inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

### STATEMENT OF PRACTICAL TREATMENT

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

See Additional Precautionary Statements on Next Page.

In case of an emergency endangering life or property involving this product, call collect, day or night, Area Code 201-835-3100.



## PRECAUTIONARY STATEMENTS

### CAUTION

Harmful if inhaled or absorbed through the skin. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

#### DIRECTIONS FOR USE

It is a violation of Federal law to apply this product in a manner inconsistent with its labeling.

#### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

**Storage:** Store in a cool dry place.

**Pesticide Disposal:** Wastes resulting from use of this product may be disposed of on site or at an approved waste disposal facility.

**Container Disposal:** Triple rinse (or equivalent), then puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke. Do not reuse container.

ACROBE may be applied to any water sites except treated, finished drinking water reservoirs or drinking water receptacles. Since the active ingredient in ACROBE is exempt from the requirement of a tolerance on all raw agricultural commodities, applications to irrigation water are permissible.

#### DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the use or application of the product contrary to label instructions, all of which are beyond the control of American Cyanamid Company. All such risks shall be assumed by the user.

American Cyanamid Company warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above.

Any damages arising from a breach of this warranty shall be limited to direct damages and shall not include consequential commercial damages such as loss of profits or values or any other special or indirect damages. American Cyanamid Company makes no other express or implied warranty, including any other express or implied warranty of FITNESS or of MERCHANTABILITY.

## MOSQUITOES:

Habitat	Rate Required for Control
Flood water, roadside ditches, irrigation ditches, rice fields, pastures, woodland pools, snow melt pools . . . . .	0.25-0.50 pts./A
Tidal water, salt marshes, catch basins, storm water retention areas . . . . .	0.50-1.0 pts./A
Polluted water (sewage lagoons, etc.) water with moderate organic matter, and water with a high concentration of suspended solids . . . . .	1.0-2.0 pts./A

#### SPECIFIC APPLICATION INSTRUCTIONS

ACROBE may be applied in conventional aerial and ground application equipment with sufficient water to provide thorough coverage of the target area. The amount of water needed will be dependent on weather, type of spray equipment and mosquito habitat.

Ground applications should be made in 5-100 gallons per acre in conventional equipment. As low as one gallon per surface area can be used when the target area is open with a light vegetative cover. Aerial applications may be done diluted or undiluted. For undiluted applications, apply 0.20 to 2.0 pts./A of ACROBE through fixed wing aircraft or helicopters equipped with conventional boom and nozzles or rotary mist atomizers. For diluted applications, fill the mix tank or aircraft hopper with the appropriate volume of water and agitate before adding ACROBE. Maintain agitation during loading and spraying.

## BLACKFLIES:

SUGGESTED CONCENTRATION RANGE . . . . .	0.5-0.75 PPM (0.5-0.75 mg/liter of stream water)
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The concentration should be maintained in the stream for 15 minutes.

#### SPECIFIC APPLICATION INSTRUCTIONS

Apply with conventional ground and aerial application equipment or metered release systems from infested sites to achieve larvicidal concentrations. Insecticidal activity should occur within 24 hours. Reapply as needed. ACROBE may be applied undiluted through appropriate ULV application equipment.

# SPECIMEN

**Vectobac-12AS**   
 BIOLOGICAL LARVICIDE

## AQUEOUS SUSPENSION


### Active Ingredient:

*Bacillus thuringiensis*, Serotype, H-14, 1200  
International Toxic Units (ITU) per milligram  
(Equivalent to 4.84 billion ITU per gallon;  
1.279 billion ITU per liter) ..... 1.2%  
Inert Ingredients ..... 98.8%

KEEP OUT OF REACH  
OF CHILDREN

## CAUTION

EPA Reg. No. 275-66  
EPA Establishment No. 33762-IA-1  
List No. 5605

 Chemical & Agricultural Products Division  
Abbott Laboratories  
North Chicago, IL 60064

Vectobac-12AS is a highly selective insecticide for use against mosquito, black fly and fungus gnat larvae.

## APPLICATION DIRECTIONS

### MOSQUITO Habitat

### Suggested Range Rate\*

(Such as the following examples):

Irrigation ditches, roadside ditches,  
flood water, standing ponds, wood-  
land pools, snow melt pools, pastures,  
catch basins, storm water retention areas,  
tidal water, salt marshes and rice fields.

0.25 pt -  
1 pt/acre

Polluted water (such as sewage  
lagoons, animal waste lagoons)

1 pt-2pts/acre

\*Use higher rate in polluted water and when late 3rd and early 4th instar  
larvae predominate, mosquito populations are high, water is heavily  
polluted, and/or algae are abundant.

### BLACK FLIES Habitat

### Suggested Range Rate

Streams

0.5-25 mg/liter  
stream water\*\*  
(=ppm)

\*\*Use higher rate when stream contains high concentration of organic  
material, or dense aquatic vegetation.

## GROUND AND AERIAL APPLICATION

Vectobac-12AS may be applied in conventional ground or aerial  
application equipment with quantities of water sufficient to  
provide uniform coverage of the target area. The amount of  
water needed per acre will depend on weather, spray equipment,  
and mosquito habitat characteristics. Do not mix more  
Vectobac-12AS than can be used in a 2-week period.

For most ground spraying, apply in 5-100 gallons per acre using  
hand-pump, airblast, mist blower, etc., spray equipment.

For aerial application, Vectobac-12AS may be applied either  
undiluted or diluted with water. For undiluted applications, apply  
0.25 to 2.0 pts/acre of Vectobac-12AS through fixed wing or  
helicopter aircraft equipped with either conventional boom and  
nozzle systems or rotary atomizers.

For diluted application, fill the mix tank or plane hopper with the  
desired quantity of water. Start the mechanical or hydraulic  
agitation to provide moderate circulation before adding the  
Vectobac-12AS. Maintain the agitation while loading or spraying.  
For all aerial applications, a droplet spectrum in the range of  
50-100 microns (VMD) will produce best results.

Rinse and flush spray equipment thoroughly following each use.

For black fly aerial applications, Vectobac-12AS can be applied  
undiluted via fixed wing or helicopter aircraft equipped with  
either conventional boom and nozzle systems or open pipes.  
Rate of application will be determined by the stream discharge  
and the required amount of Vectobac-12AS necessary to maintain  
a 0.5-25 ppm concentration in the stream water. Vectobac-12AS can  
also be applied diluted with similar spray equipment. Do not mix  
more Vectobac-12AS than can be used in a 2-week period.

## Fungus Gnat Habitat (All states except California)

Ornamental plants in  
greenhouse, on nursery  
plantings in potting soil  
mixtures with high per-  
cent peat.

\*8 to 16 oz/100 gallons = 0.5 to 1 tsp/gallon  
\*\*32 to 64 oz/100 gallons = 2 to 4 tsp/gallon

Apply with adequate water by soil drench to sufficiently wet the  
soil surface above and under greenhouse benches where larvae  
are found. Areas under benches should be treated at high rate,  
as this is one of the primary breeding areas. Reapply as needed.  
Vectobac-12AS is a larvicide and will not control adult gnats.  
Fungus gnat larvae generally respond to Vectobac-12AS  
treatment within 24 hours following application.

Vectobac-12AS can be applied by injection into drip or overhead  
irrigation systems.

Vectobac-12AS is not phytotoxic to ornamental plant species.  
However, since all ornamental plant species have not been  
evaluated, sensitivity to Vectobac-12AS should be checked on  
several plants prior to wide scale usage.

## SMALL QUANTITY DILUTION RATES FOR VECTOBAC-AS

Rates in Pints Per Acre	Gallons Spray Solution/Acre		
	10 Gal/A	25 Gal/A	50 Gal/A
	(Ounces Needed Per Gallon of Spray)		
0.25	0.2	0.1	0.04
0.5	0.4	0.2	0.08
1.0	0.8	0.33	0.16
2.0	1.6	0.66	0.32

## PRECAUTIONARY STATEMENTS HAZARD TO HUMANS

As a precautionary measure in case of contact, flush eyes with  
plenty of water. In case of irritation, contact a physician.

## DIRECTIONS FOR USE

### General Classification

It is a violation of Federal law to use this product in a manner  
inconsistent with its labeling.

## STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

STORAGE: Store in a cool dry place.

PESTICIDE DISPOSAL: Wastes resulting from use of this  
product may be disposed of on site or at an approved waste  
disposal facility.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then  
puncture and dispose of in a sanitary landfill, or by incineration,  
or, if allowed by state and local authorities, by burning. If  
burned, stay out of smoke. Do not reuse container.

## NOTICE TO USER

Seller makes no warranty, express or implied, of merchantability,  
fitness or otherwise concerning the use of this product other than  
as indicated on the label. User assumes all risk of use, storage or  
handling not in strict accordance with accompanying directions.



# vectobac-12AS

BIOLOGICAL LARVICIDE

## Introduction

VECTOBAC®-12AS biological larvicide is a highly selective insecticide for control of most species of mosquito, black fly and fungus gnat larvae. It contains spores and delta-endotoxin crystals of *Bacillus thuringiensis*, Serotype H-14 (*B.t.* H-14). Activity against larvae is dependent upon the delta-endotoxin crystal. *B.t.* H-14 is well-suited for use in integrated pest management (IPM) control programs and environmentally sensitive areas, since toxicity testing has not indicated any harmful effect on mammals (and, by analogy, humans), birds, fish, or aquatic invertebrate predators

and parasites. The rapid rate of kill, typically within 24 hours, is in harmony with the inspection and evaluation programs currently used by most mosquito and black fly control operators.

The fermentation and formulation expertise acquired by Abbott Laboratories (North Chicago, Illinois, USA) in developing *B.t.* products for agriculture and forestry is being applied to the production of VECTOBAC brand *B.t.* H-14, thereby insuring high quality, stability, and performance.

## Formulation

VECTOBAC-12AS is an aqueous suspension of *Bacillus thuringiensis*, Serotype H-14, containing 1200 International Toxic Units, (ITU) per milligram (equivalent to 4.84 billion ITU per gallon; 1.279 billion ITU per liter).

This formulation has been designed to be conveniently used in conventional ground or aerial application equipment. Flow properties also enable accurate metering into stream waters for black fly control.

## Selectivity

The insecticidal activity of VECTOBAC-12AS is primarily limited to larvae of mosquitoes (Family Culicidae), black flies (Family Simuliidae) and fungus gnats (Families Sciaridae, Phoridae and Mycetophilidae). Tests have been conducted to determine the safety of *B.t.* H-14 to non-target species of

vertebrates and invertebrates. Results of these tests have shown that *B.t.* H-14 provides excellent control of larvae, while demonstrating no harmful effects on mammals (and, by analogy, humans), fish and most non-target aquatic organisms and beneficial insects.

## Recommendations For Use

Recommended application rates for mosquito larvae range from 0.25 pint-1 quart VECTOBAC-12AS per acre, depending upon habitat and larval stage. Rates for control of black fly larvae range from 0.5 to 25 mg/liter

of stream water with higher rates being used in streams containing high concentrations of organic material.

Rates for the control of fungus gnats, ranges from 8 to 64 oz./100 gallons.

## Ground and Aerial Application

VECTOBAC-12AS may be applied by either ground or aerial application equipment. For most ground spraying, apply in sufficient water (5-100 gallons per acre) to provide uniform coverage of the target area.

For aerial application, VECTOBAC-12AS maybe applied either undiluted or diluted with water. (See label, opposite side, for

details.) Product containers should be shaken well before usage and proper agitation should be maintained in spray tank during application. No more VECTOBAC-12AS should be mixed than can be used in a 2-week period.

Best control of fungus gnats is achieved when applied as a soil drench.

## Package Size Availability

VECTOBAC-12AS is available in 5 gallon units (2 x 2.5 gallon plastic containers), 30 and 55 gallon drums and bulk tanker trucks (4,000-6,000 gallons).



ABBOTT LABORATORIES  
Chemical and Agricultural Products Division  
North Chicago, IL 60064  
For information call:  
1-800-323-9597  
In Illinois 1-800-642-1959

EASTERN REGIONAL OFFICE  
310 S. Dillard St.  
Suite 410  
Winter Garden, FL 32787  
(305) 656-8779

WESTERN REGIONAL OFFICE  
1540 East Shaw  
Suite 123  
Fresno, CA 93710  
(209) 227-2926

# ABATE<sup>®</sup> 1-SG

insecticide

## FOR CONTROL OF MOSQUITO AND MIDGE LARVAE

## Active Ingredient:

Temephos (O,O'-(thiodi-4,1-phenylene) O,O,O',O'-tetramethyl phosphorothioate) ..... 1%

Inert Ingredients ..... 99%

Total 100%

EPA Reg. No. 241-174AA

EPA Est. No. 8329-1L-01

## KEEP OUT OF REACH OF CHILDREN CAUTION

See Below For Additional Precautionary Statements

## STATEMENT OF PRACTICAL TREATMENT

If in Eyes: Flush with plenty of water. Get medical attention.

If on Skin: Wash with plenty of soap and water after handling. Get medical attention if irritation persists.

NOTE TO PHYSICIANS: This product may cause cholinesterase inhibition. Atropine is antidotal. Pralidoxime chloride (2-PAM; PROTOPAM chloride) may be effective as an adjunct to atropine.

## PRECAUCION

PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

## CAUTION

Avoid breathing dust. Avoid contact with skin. Wash thoroughly with soap and water after handling. Do not contaminate food or feed products.

## ENVIRONMENTAL HAZARDS

This product is toxic to birds and fish. Fish and other aquatic organisms in water treated with this product may be killed. You must consult your State Fish and Game Agency before applying this product to waters or wetlands. Do not contaminate water by cleaning of equipment or disposing of wastes.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

## STORAGE AND DISPOSAL

PROHIBITIONS: Do not contaminate water, food, or feed by storage or disposal.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

GENERAL: Consult Federal, State or local disposal authorities for approved alternative procedures.

For control of mosquito and midge larvae, apply ABATE 1-SG as specified below:

Areas of Treatment	Lbs. Per Acre
Standing water, shallow ponds, lakes, woodland pools, catch basins	5-10
Tidal water, marshes, swamps and waters high in organic content	10-20
May be applied as a spot treatment to catch basins and similar areas where mosquitoes may breed.	
Apply uniformly and repeat applications as necessary. Do not use on crops used for food, forage or pasture.	

## DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the use or application of the product contrary to label instructions, all of which are beyond the control of American Cyanamid Company. All such risks shall be assumed by the user.

American Cyanamid Company warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above.

Any damages arising from a breach of this warranty shall be limited to direct damages and shall not include consequential commercial damages such as loss of profits or values or any other special or indirect damages.

American Cyanamid Company makes no other express or implied warranty, including any other express or implied warranty of FITNESS or of MERCHANTABILITY.

In case of an emergency endangering life or property involving this product, call collect, day or night, Area Code 201-835-3100

\*Registered trademark of American Cyanamid Company

Net Contents: 50 Lbs.

24678-0134D-42  
9:87

## ENDANGERED SPECIES RESTRICTIONS

Before using this product to control or eradicate mosquito larvae in a county listed below, you must contact the Endangered Species Specialist in the Regional Field Office of the U.S. Fish and Wildlife Service (FWS) indicated below. You must provide FWS with your name and phone number, the product you intend to use, and the specific location in which you intend to use it. The U.S. Fish and Wildlife Service will inform you whether your proposed use is in the range of endangered species. Use of this product in the range of endangered species, as defined for you by FWS, is prohibited.

Contact FWS Field Offices at the following numbers:

**ALABAMA** (Jackson, Mississippi, 601-965-4900)  
Colbert, Greene, Jackson, Jefferson, Lamar, Lauderdale, Limestone, Madison, Marshall, Morgan, Pickens, and Sumter

**ARIZONA** (Phoenix, Arizona, 602-261-4720)  
Graham, Lapaz, Mohave, Pima, Pinal, Santa Cruz, and Yuma

**ARKANSAS** (Jackson, Mississippi, 601-965-4900)  
Benton, Clark, Clay, Cross, Lawrence, Lee, Poinsett, Polk, Randolph, Sharp, and St. Francis

**CALIFORNIA** (Sacramento, California, 916-978-4613)  
Alameda, Colusa, Contra Costa, Humboldt, Imperial, Inyo, Los Angeles, Marin, Merced, Modoc, Mono, Monterey, Napa, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Solano, Sonoma, Stanislaus, Sutter, and Ventura

**DISTRICT OF COLUMBIA** (Annapolis, Maryland, 301-269-5448)  
Rock Creek Park

**FLORIDA** (Jacksonville, Florida, 904-791-2580)  
Alachua, Baker, Bradford, Brevard, Broward, Charlotte, Citrus, Clay, Collier, Columbia, Dade, De Soto, Dixie, Duval, Flagler, Gadsden, Gilchrist, Glades, Hardee, Hendry, Hernando, Highlands, Hillsborough, Indian River, Jefferson, Lafayette, Lake, Lee, Leon, Levy, Madison, Manatee, Marion, Martin, Monroe, Nassau, Okaloosa, Okeechobee, Orange, Osceola, Palm Beach, Pasco, Pinellas, Polk, Putnam, St. Johns, St. Lucie, Sarasota, Seminole, Sumter, Suwanee, Taylor, Union, Volusia, Wakulla, and Walton

**GEORGIA** (Jacksonville, Florida, 904-791-2580)  
Brantley, Bryan, Bulloch, Burke, Camden, Candler, Catoosa, Charlton, Chatham, Effingham, Emanuel, Evans, Glascock, Glynn, Jefferson, Jenkins, Johnson, Liberty, Long, McIntosh, Pierce, Richmond, Screven, Ware, Washington, and Wayne

**HAWAII** (Honolulu, Hawaii, 808-546-5608)  
Islands of Hawaii, Kauai, Maui, Molokai, Niihau, and Oahu

**IDAHO** (Boise, Idaho, 208-334-1806, Ext. 16)  
Caribou, Bear Lake, and Bonneville

**ILLINOIS** (Rock Island, Illinois, 309-793-5800)  
Gallatin, Henderson, Jo Daviess, Massac, Mercer, Pike, Pulaski, Rock Island

**INDIANA** (Bloomington, Indiana, 812-334-4261)  
DeKalb and Posey

**IOWA** (St. Paul, Minnesota, 612-725-7131)  
Allakamee, Clayton, Clinton, Des Moines, Dubuque, Fayette, Jackson, Louisa, Muscatine, and Scott

**KANSAS** (Grand Island, Nebraska, 308-381-5571)  
Clark, Comanche, Meade, and Stafford

**KENTUCKY** (Asheville, North Carolina, 704-259-0321)  
Ballard, Butler, Edmonson, Green, Hart, Jackson, Laurel, Livingston, Marshall, McCracken, McCreary, Pulaski, Rockcastle, Warren, and Wayne

**MARYLAND** (Annapolis, Maryland, 301-269-5448)  
Harford

**MINNESOTA** (St. Paul, Minnesota, 612-725-7131)  
Houston and Washington

**MISSISSIPPI** (Jackson, Mississippi, 601-965-4900)  
Claiborne, Copiah, Hinds, Itawamba, Jackson, Lowndes, Monroe, and Noxubee

**MISSOURI** (Columbia, Missouri, 314-875-5374)  
Barry, Benton, Bollinger, Butler, Camden, Cedar, Christian, Cole, Dallas, Franklin, Gasconade, Greene, Hickory, Jasper, Jefferson, Lawrence, Massac, Miller, Newton, Osage, Polk, Ralls, Ripley, St. Clair, St. Louis, Stone, and Wayne

**NEBRASKA** (Grand Island, Nebraska, 308-381-5571)  
Boyd, Brown, Buffalo, Butler, Cass, Cedar, Colfax, Dawson, Dodge, Douglas, Hall, Hamilton, Holt, Howard, Kearney, Keya Paha, Knox, Merrick, Nance, Phelps, Platte, Polk, Rock, Sarpy, and Saunders

**NEVADA** (Reno, Nevada, 702-784-5227)  
Clark, Lincoln, Nye, and White Plain

**NEW MEXICO** (Albuquerque, New Mexico, 505-566-2323)  
Chaves, Eddy, and Socorro

**NORTH CAROLINA** (Asheville, North Carolina, 704-259-0321)  
Edgecombe, Macon, Nash, Pitt, and Swain

**NORTH DAKOTA** (Grand Island, Nebraska, 308-381-5571)  
Burleigh, Emmons, McKensie, McLean, Mercer, Morton, and Oliver

**OHIO** (Columbus, Ohio, 614-231-3416)  
Pickaway, Washington, and Williams

**OKLAHOMA** (Tulsa, Oklahoma, 918-581-7458)  
McCurtain and Pushmataha

**OREGON** (Olympia, Washington, 206-753-9444)  
Lake

**SOUTH CAROLINA** (Asheville, North Carolina, 704-259-0321)  
Aiken, Barnwell, Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Hampton, Horry, Jasper, and Marion

**SOUTH DAKOTA** (Pierre, South Dakota, 605-224-8692)  
Hughes and Yankton

**TENNESSEE** (Asheville, North Carolina, 704-259-0321)  
Bedford, Blount, Bradley, Claiborne, Cumberland, Davison, Decatur, Franklin, Hamilton, Hancock, Hardin, Hawkins, Hickman, Knox, Lawrence, Lincoln, Loudon, Marion, Marshall, Maury, Meigs, Monroe, Morgan, Polk, Rhea, Roane, Scott, Sequatchie, Smith, Sullivan, Trousdale, Wayne, and Williamson

**TEXAS** (Texas, 713-229-3681 or 817-334-2961)  
Brewster, Comal, Hays, Jeff Davis, Menard, Pecos, and Reeves

**UTAH** (Salt Lake City, Utah, 801-524-4430)  
Utah and Washington

**VIRGINIA** (Annapolis, Maryland, 301-269-5448)  
Augusta, Lee, Russell, Scott, Smyth, Tazewell, Washington, and Wise

**WISCONSIN** (Green Bay, Wisconsin, 414-465-2682)  
Crawford, Grant, Iowa, Pierce, Polk, Richland, St. Croix, and Vernon

**WYOMING** (Helena, Montana, 406-449-5225)  
Lincoln and Sublette



**CYANAMID**

American Cyanamid Company  
Agricultural Division  
VPC Ventures  
Wayne, NJ 07470

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# ABATE<sup>®</sup> 2-CG

insecticide

## FOR CONTROL OF MOSQUITO AND MIDGE LARVAE

Active Ingredient:  
 Temephos ( $\text{O}_2\text{O}'$ -(thiodi-4,1-phenylene)  $\text{O}_2\text{O}_2\text{O}'$ -tetramethyl phosphorothioate) ..... 2%  
 Inert Ingredients ..... 98%  
 Total 100%

EPA Reg. No. 241-151AA

EPA Est. No. 8329-1L-01

## KEEP OUT OF REACH OF CHILDREN CAUTION

SPECIMEN

See Below For Additional Precautionary Statements

### STATEMENT OF PRACTICAL TREATMENT

If in Eyes: Flush with plenty of water. Get medical attention.

If on Skin: Wash with plenty of soap and water after handling. Get medical attention if irritation persists.

NOTE TO PHYSICIANS: This product may cause cholinesterase inhibition. Atropine is antidotal. Pralidoxime chloride (2-PAM; PROTOPAM chloride) may be effective as an adjunct to atropine.

### PRECAUCION

PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### CAUTION

Avoid breathing dust. May cause eye irritation. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Do not contaminate food or feed products.

#### ENVIRONMENTAL HAZARDS

This product is toxic to birds and fish. Fish and other aquatic organisms in water treated with this product may be killed. You must consult your State Fish and Game Agency before applying this product to waters or wetlands. Do not contaminate water by cleaning of equipment or disposing of wastes.

#### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

#### STORAGE AND DISPOSAL

PROHIBITIONS: Do not contaminate water, food, or feed by storage or disposal.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

GENERAL: Consult Federal, State or local disposal authorities for approved alternative procedures.

In case of an emergency endangering life or property involving this product, call collect, day or night, Area Code 201-835-3100.

Areas of Treatment	Insects (Larvae)	Lbs. / Acre	Application
Standing water, shallow ponds, lakes, woodland pools, catch basins	Mosquito and Midge	2.5-5	Apply uniformly by air or ground equipment. Repeat applications as necessary.
Tidal waters, marshes, swamps and water high in organic content		10	
Highly polluted waters		25	
Marsh lands, margins of streams, intertidal zones of sandy beaches	Gnat Punkie Sandfly	5-10	Apply uniformly by ground or air equipment. Repeat applications as necessary.

Do not use on crops used for food, forage or pasture.

#### DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the use or application of the product contrary to label instructions, all of which are beyond the control of American Cyanamid Company. All such risks shall be assumed by the user.

American Cyanamid Company warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above.

Any damages arising from a breach of this warranty shall be limited to direct damages and shall not include consequential commercial damages such as loss of profits or values or any other special or indirect damages.

American Cyanamid Company makes no other express or implied warranty, including any other express or implied warranty of FITNESS or of MERCHANTABILITY.

\*Registered trademark of American Cyanamid Company

## ENDANGERED SPECIES RESTRICTIONS

Before using this product to control or eradicate mosquito larvae in a county listed below, you must contact the Endangered Species Specialist in the Regional Field Office of the U.S. Fish and Wildlife Service (FWS) indicated below. You must provide FWS with your name and phone number, the product you intend to use, and the specific location in which you intend to use it. The U.S. Fish and Wildlife Service will inform you whether your proposed use is in the range of endangered species. Use of this product in the range of endangered species, as defined for you by FWS, is prohibited.

Contact FWS Field Offices at the following numbers:

**ALABAMA** (Jackson, Mississippi, 601-965-4900)  
Colbert, Greene, Jackson, Jefferson, Lamar, Lauderdale, Limestone, Madison, Marshall, Morgan, Pickens, and Sumter

**ARIZONA** (Phoenix, Arizona, 602-261-4720)  
Graham, Lapaz, Mohave, Pima, Pinal, Santa Cruz, and Yuma

**ARKANSAS** (Jackson, Mississippi, 601-965-4900)  
Benton, Clark, Clay, Cross, Lawrence, Lee, Poinsett, Polk, Randolph, Sharp, and St. Francis

**CALIFORNIA** (Sacramento, California, 916-978-4613)  
Alameda, Colusa, Contra Costa, Humboldt, Imperial, Inyo, Los Angeles, Marin, Merced, Modoc, Mono, Monterey, Napa, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Solano, Sonoma, Stanislaus, Sutter, and Ventura

**DISTRICT OF COLUMBIA** (Annapolis, Maryland, 301-269-5448)  
Rock Creek Park

**FLORIDA** (Jacksonville, Florida, 904-791-2580)  
Alachua, Baker, Bradford, Brevard, Broward, Charlotte, Citrus, Clay, Collier, Columbia, Dade, De Soto, Dixie, Duval, Flagler, Gadsden, Gilchrist, Glades, Hardee, Hendry, Hernando, Highlands, Hillsborough, Indian River, Jefferson, Lafayette, Lake, Lee, Leon, Levy, Madison, Manatee, Marion, Martin, Monroe, Nassau, Okaloosa, Okeechobee, Orange, Osceola, Palm Beach, Pasco, Pinellas, Polk, Putnam, St. Johns, St. Lucie, Sarasota, Seminole, Sumter, Suwanee, Taylor, Union, Volusia, Wakulla, and Walton

**GEORGIA** (Jacksonville, Florida, 904-791-2580)  
Brantley, Bryan, Bulloch, Burke, Camden, Candler, Catoosa, Charlton, Chatham, Effingham, Emanuel, Evans, Glascock, Glynn, Jefferson, Jenkins, Johnson, Liberty, Long, McIntosh, Pierce, Richmond, Screven, Ware, Washington, and Wayne

**HAWAII** (Honolulu, Hawaii, 808-546-5608)  
Islands of Hawaii, Kauai, Maui, Molokai, Niihau, and Oahu

**IDAHO** (Boise, Idaho, 208-334-1806, Ext. 16)  
Caribou, Bear Lake, and Bonneville

**ILLINOIS** (Rock Island, Illinois, 309-793-5800)  
Gallatin, Henderson, Jo Daviess, Massac, Mercer, Pike, Pulaski, Rock Island

**INDIANA** (Bloomington, Indiana, 812-334-4261)  
DeKalb and Posey

**IOWA** (St. Paul, Minnesota, 612-725-7131)  
Allakamee, Clayton, Clinton, Des Moines, Dubuque, Fayette, Jackson, Louisa, Muscatine, and Scott

**KANSAS** (Grand Island, Nebraska, 308-381-5571)  
Clark, Comanche, Meade, and Stafford

**KENTUCKY** (Asheville, North Carolina, 704-259-0321)  
Ballard, Butler, Edmonson, Green, Hart, Jackson, Laurel, Livingston, Marshall, McCracken, McCreary, Pulaski, Rockcastle, Warren, and Wayne

**MARYLAND** (Annapolis, Maryland, 301-269-5448)  
Harford

**MINNESOTA** (St. Paul, Minnesota, 612-725-7131)  
Houston and Washington

**MISSISSIPPI** (Jackson, Mississippi, 601-965-4900)  
Claiborne, Copiah, Hinds, Itawamba, Jackson, Lowndes, Monroe, and Noxubee

**MISSOURI** (Columbia, Missouri, 314-875-5374)  
Barry, Benton, Bollinger, Butler, Camden, Cedar, Christian, Cole, Dallas, Franklin, Gasconade, Greene, Hickory, Jasper, Jefferson, Lawrence, Massac, Miller, Newton, Osage, Polk, Ralls, Ripley, St. Clair, St. Louis, Stone, and Wayne

**NEBRASKA** (Grand Island, Nebraska, 308-381-5571)  
Boyd, Brown, Buffalo, Butler, Cass, Cedar, Colfax, Dawson, Dodge, Douglas, Hall, Hamilton, Holt, Howard, Kearney, Keya Paha, Knox, Merrick, Nance, Phelps, Platte, Polk, Rock, Sarpy, and Saunders

**NEVADA** (Reno, Nevada, 702-784-5227)  
Clark, Lincoln, Nye, and White Plain

**NEW MEXICO** (Albuquerque, New Mexico, 505-566-2323)  
Chaves, Eddy, and Socorro

**NORTH CAROLINA** (Asheville, North Carolina, 704-259-0321)  
Edgecombe, Macon, Nash, Pitt, and Swain

**NORTH DAKOTA** (Grand Island, Nebraska, 308-381-5571)  
Burleigh, Emmons, McKensie, McLean, Mercer, Morton, and Oliver

**OHIO** (Columbus, Ohio, 614-231-3416)  
Pickaway, Washington, and Williams

**OKLAHOMA** (Tulsa, Oklahoma, 918-581-7458)  
McCurtain and Pushmataha

**OREGON** (Olympia, Washington, 206-753-9444)  
Lake

**SOUTH CAROLINA** (Asheville, North Carolina, 704-259-0321)  
Aiken, Barnwell, Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Hampton, Horry, Jasper, and Marion

**SOUTH DAKOTA** (Pierre, South Dakota, 605-224-8692)  
Hughes and Yankton

**TENNESSEE** (Asheville, North Carolina, 704-259-0321)  
Bedford, Blount, Bradley, Claiborne, Cumberland, Davison, Decatur, Franklin, Hamilton, Hancock, Hardin, Hawkins, Hickman, Knox, Lawrence, Lincoln, Loudon, Marion, Marshall, Maury, Meigs, Monroe, Morgan, Polk, Rhea, Roane, Scott, Sequatchie, Smith, Sullivan, Trousdale, Wayne, and Williamson

**TEXAS** (Texas, 713-229-3681 or 817-334-2961)  
Brewster, Comal, Hays, Jeff Davis, Menard, Pecos, and Reeves

**UTAH** (Salt Lake City, Utah, 801-524-4430)  
Utah and Washington

**VIRGINIA** (Annapolis, Maryland, 301-269-5448)  
Augusta, Lee, Russell, Scott, Smyth, Tazewell, Washington, and Wise

**WISCONSIN** (Green Bay, Wisconsin, 414-465-2682)  
Crawford, Grant, Iowa, Pierce, Polk, Richland, St. Croix, and Vernon

**WYOMING** (Helena, Montana, 406-449-5225)  
Lincoln and Sublette



# ABATE<sup>®</sup> 5-CG

insecticide

## FOR CONTROL OF MOSQUITO AND MIDGE LARVAE

Active Ingredient:  
 Temephos (O,O'-(thiodi-4,1-phenylene) O,O,O',O'-tetramethyl phosphorothioate) ..... 5%  
 Inert Ingredients ..... 95%  
 Total ..... 100%

EPA Reg. No. 241-150AA

EPA Est. No. 6720-FL-01

**KEEP OUT OF REACH OF  
 CHILDREN  
 DANGER/PELIGRO**

See Below For Additional Precautionary Statements

**PRECAUCION AL USUARIO:** Si usted no lee ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

### STATEMENT OF PRACTICAL TREATMENT

**If in Eyes:** Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes.

**If Swallowed:** Drink promptly a large quantity of milk, egg white, gelatin solution, or, if these are not available, large quantities of water. Avoid alcohol. Do not induce vomiting or give anything by mouth to an unconscious person.

**NOTE TO PHYSICIANS:** This product may cause cholinesterase inhibition. Atropine is antidotal. Pralidoxime chloride (2-PAM; PROTOPAM chloride) may be effective as an adjunct to atropine.

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

In case of an emergency endangering life or property involving this product, call collect, day or night, Area Code 201-835-3100.

#### DANGER

Corrosive: Causes irreversible eye damage. Do not get in eyes or on clothing. Wear goggles. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

#### ENVIRONMENTAL HAZARDS

This product is toxic to birds and fish. Fish and other aquatic organisms in water treated with this product may be killed. You must consult your State Fish and Game Agency before applying this product to waters or wetlands. Do not contaminate water by cleaning of equipment or disposing of wastes.

#### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

#### STORAGE AND DISPOSAL

**PROHIBITIONS:** Do not contaminate water, food, or feed by storage or disposal.

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

**GENERAL:** Consult Federal, State or local disposal authorities for approved alternative procedures.

For control of mosquito and midge larvae, apply ABATE 5-CG as specified below:

Areas of Treatment	Lbs. Per Acre
Standing water, shallow ponds, lakes, woodland pools	2
Tidal waters, marshes, swamps and waters high in organic content	4
Highly-polluted waters	10
May be applied as a spot treatment to catch basins and similar areas where mosquitoes may breed.	
Apply uniformly and repeat applications as necessary. Do not use on crops used for food, forage or pasture.	

#### DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the use or application of the product contrary to label instructions, all of which are beyond the control of American Cyanamid Company. All such risks shall be assumed by the user.

American Cyanamid Company warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above.

Any damages arising from a breach of this warranty shall be limited to direct damages and shall not include consequential commercial damages such as loss of profits or values or any other special or indirect damages.

American Cyanamid Company makes no other express or implied warranty, including any other express or implied warranty of FITNESS or of MERCHANTABILITY.



American Cyanamid Company  
 Agricultural Division  
 VPC Ventures  
 Wayne, NJ 07470

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24686-01 138 D-43  
 4/88

® Registered trademark of American Cyanamid Company

Net Contents: 25 lbs.

PE-4078 Rev. #3 4/88 DLEM



# ABATE® 4-E

insecticide

## FOR CONTROL OF MOSQUITO LARVAE

Active Ingredient:	
Temephos (0,0'-(thiodi-4,1-phenylene) 0,0,0',0'-tetramethyl phosphorothioate) . . . . .	44.6%
Inert Ingredients* . . . . .	55.4%
Total	100.0%

(1 gallon contains 4 lbs. of Temephos)  
\*contains petroleum distillate

EPA Reg. No. 241-132AA

EPA Est. No. 8590-PA-1

SPECIMEN

## KEEP OUT OF REACH OF CHILDREN WARNING/AVISO

PRECAUCION AL USUARIO: Si usted no lee inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

See Side Panel For Additional Precautionary Statements

### STATEMENT OF PRACTICAL TREATMENT

If Swallowed: Do not induce vomiting. Get medical attention.  
If in Eyes: Flush with plenty of water. Get medical attention.  
If on Skin: Wash with plenty of soap and water after handling. Get medical attention if irritation persists.  
**NOTE TO PHYSICIANS:** This product may cause cholinesterase inhibition. Atropine is antidotal. Pralidoxime chloride (2-PAM; PROTOPAM chloride) may be effective as an adjunct to atropine.

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### WARNING

Harmful if swallowed or absorbed through skin. Causes skin and eye irritation. Wash thoroughly with soap and water after handling. Avoid breathing spray mist. Do not contaminate food or feed products.

#### ENVIRONMENTAL HAZARDS

This product is toxic to birds and fish. Fish and other aquatic organisms in water treated with this product may be killed. You must consult your State Fish and Game Agency before applying this product to waters or wetlands. Do not contaminate water by cleaning of equipment or disposing of wastes. This product is toxic to bees and should not be applied when bees are actively visiting the treatment area.

#### STORAGE AND DISPOSAL

**PROHIBITIONS:** Do Not contaminate water, food, or feed by storage or disposal. Do not use or store near heat or open flame.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER DISPOSAL:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration or, if allowed by State and local authorities by burning. If burned stay out of smoke.

**GENERAL:** Consult Federal, State or local disposal authorities for approved alternative procedures.

\* Registered trademark of American Cyanamid Company

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

#### MOSQUITO LARVAE CONTROL

Apply ABATE 4-E as a uniform spray in sufficient water for good coverage at the rate of 0.5 to 1.5 fluid ounces per acre. Apply to standing water, moist areas, woodland pools, shallow ponds, around the edges of lakes, swamps, marshes, tidal waters, and catch basins. Use 0.5 fluid ounces per acre in clean open water and 1.0 to 1.5 fluid ounces per acre in waters high in organic matter content. The higher rate should be used in areas known to have organophosphate resistant mosquitoes. Repeat applications as necessary.

Do not use on crops used for food, forage or pasture.

#### DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the use or application of the product contrary to label instructions, all of which are beyond the control of American Cyanamid Company. All such risks shall be assumed by the user.

American Cyanamid Company warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above.

Any damages arising from a breach of this warranty shall be limited to direct damages and shall not include consequential commercial damages such as loss of profits or values or any other special or indirect damages.

American Cyanamid Company makes no other express or implied warranty, including any other express or implied warranty of FITNESS or of MERCHANTABILITY.

In case of an emergency endangering life or property involving this product, call collect, day or night,  
Area Code 201-835-3100.

## ENDANGERED SPECIES RESTRICTIONS

Before using this product to control or eradicate mosquito larvae in a county listed below, you must contact the Endangered Species Specialist in the Regional Field Office of the U.S. Fish and Wildlife Service (FWS) indicated below. You must provide FWS with your name and phone number, the product you intend to use, and the specific location in which you intend to use it. The U.S. Fish and Wildlife Service will inform you whether your proposed use is in the range of endangered species. Use of this product in the range of endangered species, as defined for you by FWS, is prohibited.

Contact FWS Field Offices at the following numbers:

**ALABAMA** (Jackson, Mississippi, 601-965-4900)  
Colbert, Greene, Jackson, Jefferson, Lamar, Lauderdale, Lime-  
stone, Madison, Marshall, Morgan, Pickens, and Sumter  
**ARIZONA** (Phoenix, Arizona, 602-261-4720)  
Graham, Lapaz, Mohave, Pima, Pinal, Santa Cruz, and Yuma  
**ARKANSAS** (Jackson, Mississippi, 601-965-4900)  
Benton, Clark, Clay, Cross, Lawrence, Lee, Poinsett, Polk, Ran-  
dolph, Sharp, and St. Francis  
**CALIFORNIA** (Sacramento, California, 916-978-4613)  
Alameda, Colusa, Contra Costa, Humboldt, Imperial, Inyo, Los  
Angeles, Marin, Merced, Modoc, Mono, Monterey, Napa, Orange,  
Riverside, San Bernardino, San Diego, San Luis Obispo, San  
Mateo, Santa Barbara, Santa Clara, Solano, Sonoma,  
Stanislaus, Sutter, and Ventura  
**DISTRICT OF COLUMBIA** (Annapolis, Maryland,  
301-269-5448)  
Rock Creek Park  
**FLORIDA** (Jacksonville, Florida, 904-791-2580)  
Alachua, Baker, Bradford, Brevard, Broward, Charlotte, Citrus,  
Clay, Collier, Columbia, Dade, De Soto, Dixie, Duval, Flagler,  
Gadsden, Gilchrist, Glades, Hardee, Hendry, Hernando, High-  
lands, Hillsborough, Indian River, Jefferson, Lafayette, Lake, Lee,  
Leon, Levy, Madison, Manatee, Marion, Martin, Monroe, Nassau,  
Okaloosa, Okeechobee, Orange, Osceola, Palm Beach, Pasco,  
Pinellas, Polk, Putnam, St. Johns, St. Lucie, Sarasota, Seminole,  
Sumter, Suwanee, Taylor, Union, Volusia, Wakulla, and Walton  
**GEORGIA** (Jacksonville, Florida, 904-791-2580)  
Brantley, Bryan, Bulloch, Burke, Camden, Candler, Catoosa,  
Charlton, Chatham, Effingham, Emanuel, Evans, Glascock, Glynn,  
Jefferson, Jenkins, Johnson, Liberty, Long, McIntosh, Pierce,  
Richmond, Screven, Ware, Washington, and Wayne  
**HAWAII** (Honolulu, Hawaii, 808-546-5608)  
Islands of Hawaii, Kauai, Maui, Molokai, Niihau, and Oahu  
**IDAHO** (Boise, Idaho, 208-334-1806, Ext. 16)  
Caribou, Bear Lake, and Bonneville  
**ILLINOIS** (Rock Island, Illinois, 309-793-5800)  
Gallatin, Henderson, Jo Daviess, Massac, Mercer, Pike, Pulaski,  
Rock Island  
**INDIANA** (Bloomington, Indiana, 812-334-4261)  
DeKalb and Posey  
**IOWA** (St. Paul, Minnesota, 612-725-7131)  
Allakamee, Clayton, Clinton, Des Moines, Dubuque, Fayette,  
Jackson, Louisa, Muscatine, and Scott  
**KANSAS** (Grand Island, Nebraska, 308-381-5571)  
Clark, Comanche, Meade, and Stafford

**KENTUCKY** (Asheville, North Carolina, 704-259-0321)  
Ballard, Butler, Edmonson, Green, Hart, Jackson, Laurel,  
Livingston, Marshall, McCracken, McCreary, Pulaski, Rockcastle,  
Warren, and Wayne  
**MARYLAND** (Annapolis, Maryland, 301-269-5448)  
Harford  
**MINNESOTA** (St. Paul, Minnesota, 612-725-7131)  
Houston and Washington  
**MISSISSIPPI** (Jackson, Mississippi, 601-965-4900)  
Claiborne, Copiah, Hinds, Itawamba, Jackson, Lowndes, Monroe,  
and Noxubee  
**MISSOURI** (Columbia, Missouri, 314-875-5374)  
Barry, Benton, Bollinger, Butler, Camden, Cedar, Christian, Cole,  
Dallas, Franklin, Gasconade, Greene, Hickory, Jasper, Jefferson,  
Lawrence, Massac, Miller, Newton, Osage, Polk, Ralls, Ripley, St.  
Clair, St. Louis, Stone, and Wayne  
**NEBRASKA** (Grand Island, Nebraska, 308-381-5571)  
Boyd, Brown, Buffalo, Butler, Cass, Cedar, Colfax, Dawson,  
Dodge, Douglas, Hall, Hamilton, Holt, Howard, Kearney, Keya  
Paha, Knox, Merrick, Nance, Phelps, Platte, Polk, Rock, Sarpy,  
and Saunders  
**NEVADA** (Reno, Nevada, 702-784-5227)  
Clark, Lincoln, Nye, and White Plain  
**NEW MEXICO** (Albuquerque, New Mexico, 505-566-2323)  
Chaves, Eddy, and Socorro  
**NORTH CAROLINA** (Asheville, North Carolina, 704-259-0321)  
Edgecombe, Macon, Nash, Pitt, and Swain  
**NORTH DAKOTA** (Grand Island, Nebraska, 308-381-5571)  
Burleigh, Emmons, McKensie, McLean, Mercer, Morton, and  
Oliver  
**OHIO** (Columbus, Ohio, 614-231-3416)  
Pickaway, Washington, and Williams  
**OKLAHOMA** (Tulsa, Oklahoma, 918-581-7458)  
McCurain and Pushmataha  
**OREGON** (Olympia, Washington, 206-753-9444)  
Lake  
**SOUTH CAROLINA** (Asheville, North Carolina, 704-259-0321)  
Aiken, Barnwell, Beaufort, Berkeley, Charleston, Colleton, Dor-  
chester, Georgetown, Hampton, Horry, Jasper, and Marion  
**SOUTH DAKOTA** (Pierre, South Dakota, 605-224-8692)  
Hughes and Yankton  
**TENNESSEE** (Asheville, North Carolina, 704-259-0321)  
Bedford, Blount, Bradley, Claiborne, Cumberland, Davison, De-  
catur, Franklin, Hamilton, Hancock, Hardin, Hawkins, Hickman,  
Knox, Lawrence, Lincoln, Loudon, Marion, Marshall, Maury,  
Meigs, Monroe, Morgan, Polk, Rhea, Roane, Scott, Sequatchie,  
Smith, Sullivan, Trousdale, Wayne, and Williamson  
**TEXAS** (Texas, 713-229-3681 or 817-334-2961)  
Brewster, Comal, Hays, Jeff Davis, Menard, Pecos, and Reeves  
**UTAH** (Salt Lake City, Utah, 801-524-4430)  
Utah and Washington  
**VIRGINIA** (Annapolis, Maryland, 301-269-5448)  
Augusta, Lee, Russell, Scott, Smyth, Tazewell, Washington, and  
Wise  
**WISCONSIN** (Green Bay, Wisconsin, 414-465-2682)  
Crawford, Grant, Iowa, Pierce, Polk, Richland, St. Croix, and  
Vernon  
**WYOMING** (Helena, Montana, 406-449-5225)  
Lincoln and Sublette



Agricultural Division  
VPC Ventures  
Wayne, NJ 07470

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

05/01/91

KELLY J. PARKER  
ZOECON CORPORATION  
12200 DENTON DRIVE  
DALLAS TX 75234

OFFICE OF  
PESTICIDES AND TOXIC  
SUBSTANCES

Product Name: ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20  
Company Name: ZOECON CORPORATION  
Application No.: 143324  
EPA Reg. No.: 2724-446  
EPA Receipt Date: 04/24/91

Subject: Front End Screen for an Amendment

Dear Sir or Madam:

Your application for registration has been received by the Office of Pesticide Programs and has passed a preliminary screen for completeness. It will be placed in line for review to determine its acceptability. The application will be processed in chronological order of receipt.

Although the 1988 FIFRA amendments mandate EPA to review applications for expedited registration or amendments within 90 days, this turnaround time will not be met immediately due to the backlog of applications received before December 24, 1988. However, EPA is increasing human and automated resources and making necessary procedural changes in order to eliminate the backlog and to meet the 90-day response time as soon as possible.

If you have any questions, you may contact Phil Hutton, Product Manager 18, at (703)-557-2690.

Sincerely,

Team Leader  
Front End Processing Staff  
Registration Support Branch  
Registration Division (H7504C)







UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

08/27/91

KELLY J. PARKER  
ZOECON CORPORATION  
12200 DENTON DRIVE  
DALLAS TX 75234

OFFICE OF  
PESTICIDES AND TOXIC  
SUBSTANCES

Product Name: RF-437 MOSQUITO GROWTH REGULAR SR-20  
Company Name: ZOECON CORPORATION  
Application No.: 168980  
EPA Reg. No.: 2724-446  
EPA Receipt Date: 08/21/91

Subject: Front End Screen for an Amendment

Dear Sir or Madam:

Your application for registration has been received by the Office of Pesticide Programs and has passed a preliminary screen for completeness. It will be placed in line for review to determine its acceptability. The application will be processed in chronological order of receipt.

Although the 1988 FIFRA amendments mandate EPA to review applications for expedited registration or amendments within 90 days, this turnaround time will not be met immediately due to the backlog of applications received before December 24, 1988. However, EPA is increasing human and automated resources and making necessary procedural changes in order to eliminate the backlog and to meet the 90-day response time as soon as possible.

If you have any questions, you may contact Phil Hutton, Product Manager 18, at (703)-557-2690.

Sincerely,

*Edith Mann*

Team Leader  
Front End Processing Staff  
Registration Support Branch  
Registration Division (H7504C)



Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

14 May 1991

Mr. Phil Hutton  
Product Manager (18)  
Insecticide-Rodenticide Branch  
Office of Pesticide Programs (H7505C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

RE: Zoecon RF-379 Mosquito Growth Regulator SR-20  
EPA Reg. No. 2724-446  
Name Change

Dear Mr. Hutton:

For accounting purposes at Zoecon, we need to change the name of this product from Zoecon RF-379 Mosquito Growth Regulator SR-20 to Zoecon RF-437 Mosquito Growth Regulator SR-20. This is the only change proposed at this time.

Best regards,

*Kelly J. Parker*

Kelly J. Parker  
Regulatory Specialist  
800/527-0512

5/14/91 request from  
Zoecon Corp. to  
change primary  
brand name



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460

Application for Pesticide:

☐ Registration  
☒ Amendment

OPP Identifier Number

143321

## Section I

1. Company/Product Number 2724-446	2. Date 14 May 1991	3. Product Manager Phil Hutton - PM18	4. Proposed Classification <input checked="" type="checkbox"/> General <input type="checkbox"/> Restricted
---------------------------------------	------------------------	--	---

5. Name and Address of Applicant (Include ZIP Code)

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, TX 75234

☐ Check if this is a new address

6. Product Name

Zoecon RF-379 Mosquito Growth Regulator SR-20

## Section II - Amendment Information

1. Subject

☐ Resubmission in response to Agency letter  
☐ Final printed label in response to Agency letter  
☒ Other (explain below)

Date of Letter

Name Change to Zoecon RF-437 Mosquito Growth Regulator SR-20

NO DATA

## Section III

1. Material This Product Will Be Packaged In

Child-Resistant Packaging

☐ Yes ☒ No

Unit Packaging

☐ Yes ☒ No

If "Yes,"

Unit package wgt No. per container

Water-Soluble Packaging

☐ Yes ☒ No

If "Yes,"

Package weight No. per container

2. Type of Container

☒ Metal  
☒ Plastic  
☐ Glass  
☐ Paper  
☐ Other (Specify)

3. Location of Net Contents Information

☒ Label ☐ Container

4. Size(s) of Retail Container

1 oz to 55 gallons

5. Location of Label Directions

☒ On Label  
☒ On material accompanying product

6. Manner in Which Label is Affixed To Product

☐ Lithograph ☐ Other (Specify)  
☒ Paper glued  
☐ Stenciled

## Section IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application).

Name

Kelly J. Parker

Title

Regulatory Specialist

Telephone No. (Include Area Code)

214/886-8726

6. Date Application Received (Stamped)

## Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature

3. Title

Regulatory Specialist

4. Typed Name

Kelly J. Parker

5. Date Signed

14 May 1991



# ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20

## PREVENTS EMERGENCE OF ADULT FLOODWATER MOSQUITOES

Prevents emergence of adult fleas up to 8 weeks outdoors  
Controls pre-adult fleas (larvae) up to 8 weeks  
Biorational [approach to] flea control outdoors

### ACTIVE INGREDIENT:

(S)-Methoprene [isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-

dodecadienoate]..... 20.0%  
INERT INGREDIENTS..... 80.0%

Formulation contains 1.72 lb/gal (205.2 g/l) active ingredient

KEEP OUT OF REACH OF CHILDREN

## CAUTION

See Back Panel For Additional Precautionary Statements

BECAUSE OF THE UNIQUE MODE OF ACTION OF ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20, SUCCESSFUL USE REQUIRES FAMILIARITY WITH SPECIAL TECHNIQUES RECOMMENDED FOR APPLICATION TIMING AND TREATMENT EVALUATION. SEE GUIDE TO PRODUCT APPLICATION OR CONSULT LOCAL MOSQUITO ABATEMENT AGENCY.

## NET CONTENTS:

### PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**RECOMMENDED APPLICATIONS - Introduction:** Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-437 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

**METHODS OF APPLICATION - Aerial:** Use the recommended amount of Zoecon RF-437 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre (4.7-46.8 liters/hectare) is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-437 in the appropriate volume of water to give the rate per acre recommended below.

**APPLICATION RATE:** Apply 3/4 to 1 fl.oz. of Zoecon RF-437 per acre (55 to 73 ml/hectare) in water as directed.

**For Fleas:** Apply 1 fluid ounce of RF-437 per 1000 square feet in water as directed.

### MIXING AND HANDLING INSTRUCTIONS:

1. **SHAKE WELL BEFORE USING.** Zoecon RF-437 may separate on standing and must be thoroughly agitated prior to dilution.
2. Do not mix with oil; use clean equipment.
3. Partially fill spray tank with water; then add the recommended amount of Zoecon RF-437, agitate and complete filling. Mild agitation during application is desirable.
4. Spray solution should be used within 48 hours; always agitate before spraying.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-437 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**APPLICATION SITES - Intermittently Flooded Noncrop Areas:** Zoecon RF-437 may be applied as directed above when flooding may result in floodwater mosquito hatch.

Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions. Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level.

**Crop Areas:** RF-437 may be applied to irrigated croplands after flooding to control mosquito emergence. Examples of such sites are vineyards, rice fields (including wild rice), date palm orchards, fruit and nut orchards and berry fields and bogs. Irrigated pastures may be treated after each flooding without removal of livestock.

**CHEMIGATION:** Refer to supplemental labeling entitled "Guide to Product Application" for use directions for chemigation. Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed.

**TANK MIXING INSTRUCTIONS:** RF-437 may be tank mixed with liquid *Bacillus thuringiensis* variety *israeliensis* (B.t.i.) formulations, such as **TEKNAR HP-D** (or its equivalent). The ratio of **TEKNAR HP-D** to RF-437 should range from 24:1 to 50:1 (volume/volume). For example, to prepare a 50:1 tank mix, add 1 gallon of RF-437 to 50 gallons of B.t.i. This tank mix can be applied to sites listed above at rates of 2-16 fluid ounces/acre (0.15-1.2 liters/hectare).

**For Fleas Outdoors:** Apply 1 ounce of RF-437 in 20 gallons of water to every 1000 square feet of residential turf. Pay particular attention to areas where pets frequent, such as, in and around dog houses and runs, and around shrubs, outside decks, and porches.

When using a hose-end sprayer, place required amount of RF-437 in bottle, add at least an equal amount of water and apply at low pressure, making sure to apply at 1 ounce of RF-437 per 20 gallons of water.

A conventional adulticide labeled for outdoor flea control (, such as Yardex,) should be used with RF-437 if a large population of fleas is present.

**STORAGE & DISPOSAL:** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-446  
U.S. Pats. 3,904,662; 3,912,815  
0591-C:0145E

EPA Est  
© 1989 Zoecon  
Made in U.S.A.

# ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20

PREVENTS EMERGENCE OF ADULT FLOODWATER MOSQUITOES

## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-437 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-437, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-437 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides. Zoecon RF-437 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-437 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides. After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive. Because the effect of Zoecon RF-437 is neither larval death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

The information presented herein, while not guaranteed, is to the best of our knowledge true and accurate. No warranty or guarantee, express or implied, is made regarding the performance or stability of any product, since the manner of use and conditions of storage and handling are beyond our control.

0591-C:0192E

### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-437 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-437, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredient reaches the water where it is released from the sand.

ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100 lb. batch of ALTOSAND:

99 lbs. washed, dry sand (20-45 mesh)  
0.5 lbs. Zoecon RF-437 (7.5 fluid oz./lb.)  
0.5 lbs. HiSil 233 (silicon dioxide)  
Small Funnel  
Cement Mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer, place 99 lbs. of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 lbs. (7.5 fl.oz.) of Zoecon RF-437 onto the sand. (If better wetting is required, Zoecon RF-437 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-437 (usually 5 to 10 minutes).
4. Stop the mixer and add 0.5 lbs. of HiSil 233. Cover the mixer to reduce dust. Start the mixer and run for approximately 5 minutes. (The quantity of HiSil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture of the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in Step No. 1. Add more HiSil if it flows significantly slower and reduce the amount of HiSil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of 8 to 10 lbs. of the final mixture per acre, using standard granular dispersal equipment.

### CHECK LIST

Things to remember when using Zoecon RF-437 Mosquito Growth Regulator SR-20

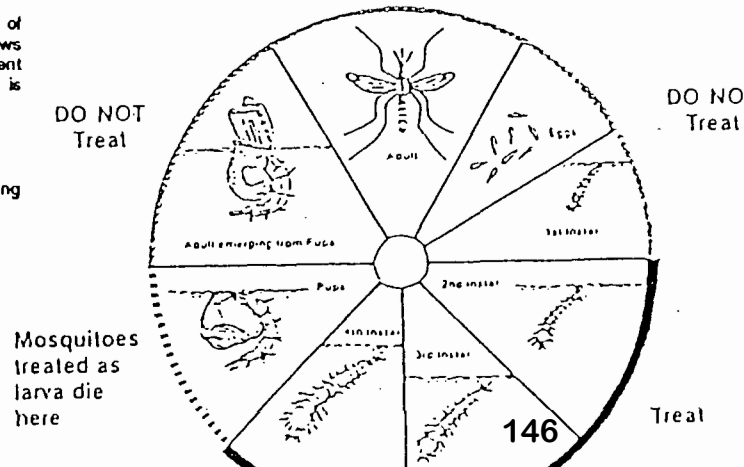
DO the following:

1. DO treat second, third and/or fourth instar larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-437 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-437 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-437 can only be measured by lack of adult emergence.

### LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-437 MOSQUITO GROWTH REGULATOR SR-20



**Chemigation:** Apply this product only through flood (basin), furrow or border irrigation systems. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

**Flood (Basin), Furrow and Border Chemigation:** Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where the pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

A pesticide supply tank is recommended for the application of product by chemigation.

Apply product continuously for the duration of water application.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

04/18/91

KELLY J. PARKER  
ZOECON CORPORATION  
12200 DENTON DRIVE  
DALLAS TX 75234



OFFICE OF  
PESTICIDES AND TOXIC  
SUBSTANCES

Product Name: ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20  
Company Name: ZOECON CORPORATION  
Application No.: 143315  
EPA Reg. No.: 2724-446  
EPA Receipt Date: 04/05/91

Subject: Front End Screen for an Amendment

Dear Sir or Madam:

Your application for registration has been received by the Office of Pesticide Programs and has passed a preliminary screen for completeness. It will be placed in line for review to determine its acceptability. The application will be processed in chronological order of receipt.

Although the 1988 FIFRA amendments mandate EPA to review applications for expedited registration or amendments within 90 days, this turnaround time will not be met immediately due to the backlog of applications received before December 24, 1988. However, EPA is increasing human and automated resources and making necessary procedural changes in order to eliminate the backlog and to meet the 90-day response time as soon as possible.

If you have any questions, you may contact Phil Hutton, Product Manager 18, at (703)-557-2690.

Sincerely,

Team Leader  
Front End Processing Staff  
Registration Support Branch  
Registration Division (H7504C)

U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs

ZOECON INDUSTRIES, INC.  
12200 DENTON DRIVE  
DALLAS, TX 75234

APR 11 1991

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your transmittal of 04/05/91. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

The data accompanying your application have passed our initial screen for compliance with the standards for data submission contained in PR Notice 86-5. A copy of your transmittal bibliography is enclosed, annotated with the Master Record ID's (MRIDs) we assigned to each document. Please use these numbers in all future references to these documents. Thanks for your cooperation.

Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

8 March 1991

Mr. Phil Hutton  
Product Manager (17)  
Insecticide-Rodenticide Branch  
Registration Division (H7505C)  
U.S. Environmental Protection Agency  
Crystal Mall, Bldg. 2  
1921 Jefferson Davis Hwy.  
Arlington, VA 22202

RE: Zoecon RF-379 Mosquito Growth Regulator, EPA Reg. No. 2724-446  
Amendment to Add Outdoor Flea Use

Dear Mr. Hutton:

418398-01

We have the opportunity to market an outdoor flea control product containing (S)-methoprene. Zoecon RF-379 is a microencapsulated product, thus allowing slow-release and protection of (S)-methoprene.

Efficacy data are provided supporting the outdoor use of this product at a rate one fluid ounce per 1000 square feet of yard (6 mg a.i./sq. ft. of surface area). The data were generated on ALTOSID Liquid Larvicide (A.L.L.), EPA Reg. No. 2724-392, containing 5% (S)-methoprene. Zoecon RF-379 is the same as A.L.L. except RF-379 contains 20% (S)-methoprene. The RF-379 is a more economical product since it is more concentrated; therefore, it was chosen over the A.L.L. as the product to take to market.

The current label addresses only mosquito use. The flea control use would be alternate language to the mosquito use language. Therefore, the flea-use label as marketed would consist of the following information:

- |  |                                    |
|--|------------------------------------|
| 1. Name (without mosquito growth regulator) - e.g. "YardCor" | 5. Directions for Use Heading      |
| 2. Flea Claims - Three claims related to fleas               | 6. Application Rate for fleas      |
| 3. Ingredient statement & Net Wt.                            | 7. Mixing and Handling Instruction |
| 4. Precautionary Statements                                  | 8. Directions for flea use         |
|  | 9. Storage and Disposal            |
|  | 10. Administrative information     |

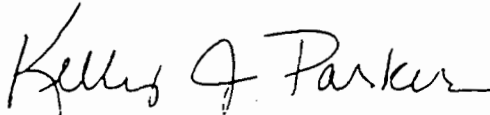
I've highlighted the new language related to the flea use and blocked the flea-use areas noted above on a label for reference.



To streamline the label, we changed the heading, "Instructions for Use" to "Mixing and Handling Instructions", a more appropriate heading. We have moved these instructions after the "Application Rate" section. We have deleted the old mixing and handling instructions section since it is a reiteration of the instructions already provided.

Chemigation instructions have been added to the Guide to Product Application in reference to the mosquito use. This is the standard referral statement from PR Notice 87-1. The flea-use product will be used only on residential yards; therefore, the chemigation statement will not be included in the flea-use label.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

**Zoecon Corporation**

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

16 April 1991

Mr. Phil Hutton  
Product Manager (18)  
Insecticide-Rodenticide Branch  
Office of Pesticide Programs (H7505C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

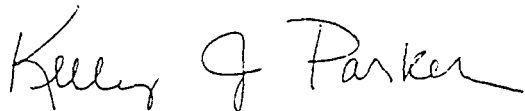
RE: Zoecon RF-379 Mosquito Growth Regulator SR-20  
EPA Reg. No. 2724-446  
Submission of Label Amendment to Add Use Sites

Dear Mr. Hutton:

Zoecon recently requested an exemption from the requirement of a tolerance for methoprene to add the following sites to the subject product label: vineyards, date palm orchards, nut and fruit orchards, rice fields, and berry fields and bogs. Petition Number 1F3970 was assigned 19 March. The RED for methoprene was issued 21 March making this petition no longer necessary.

Page 10 of the RED states, "The mosquito vector control uses that were exempt from the requirement of a tolerance under 40 CFR 180.1033 and 185.4150, are now considered non-food uses. Thus the exemptions are no longer applicable and will be revoked." Therefore, we are resubmitting this petition as a label amendment.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460

Application for Pesticide:

☐ Registration  
☒ Amendment

OPP Identifier Number

143324

## Section I

1. Company/Product Number 2724-446	2. Date April 16, 1991	3. Product Manager Phil Hutton/PM 18	4. Proposed Classification <input checked="" type="checkbox"/> General <input type="checkbox"/> Restricted
---------------------------------------	---------------------------	---	---

5. Name and Address of Applicant (Include ZIP Code)

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, TX 75234

☐ Check if this is a new address

6. Product Name

Zoecon RF-379 Mosquito Growth Regulator SR-20

## Section II - Amendment Information

1. Subject

☐ Resubmission in response to Agency letter ☐ Final printed label in response to Agency letter ☒ Other (explain below)

Date of Letter

Label Amendment

NO DATA

## Section III

1. Material This Product Will Be Packaged In		2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes," Unit package wgt    No. per container	Water-Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes," Package weight    No. per container	<input checked="" type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify)
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) of Retail Container 1 oz to 55 gallon	
5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input checked="" type="checkbox"/> On material accompanying product		6. Manner in Which Label Is Affixed To Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Other (Specify) <input checked="" type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled	

## Section IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application).

Name

Kelly J. Parker

Title Regulatory Specialist	Telephone No. (Include Area Code) 214/886-8726	6. Date Application Received (Stamped)
--------------------------------	---	--

## Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature

3. Title

Regulatory Specialist

4. Typed Name

Kelly J. Parker

5. Date Signed

April 16, 1991



# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

## PREVENTS EMERGENCE OF ADULT FLOODWATER MOSQUITOES

Prevents emergence of adult fleas up to 8 weeks outdoors  
Controls pre-adult fleas (larvae) up to 8 weeks  
Biorational [approach to] flea control outdoors

### ACTIVE INGREDIENT:

(S)-Methoprene [isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-  
dodecadienoate]..... 20.0%  
INERT INGREDIENTS..... 80.0%

Formulation contains 1.72 lb/gal (205.2 g/l) active ingredient

KEEP OUT OF REACH OF CHILDREN

## CAUTION

See Back Panel For Additional Precautionary Statements

BECAUSE OF THE UNIQUE MODE OF ACTION OF ZOECON RF-  
MOSQUITO GROWTH REGULATOR SR-20, SUCCESSFUL  
USE REQUIRES FAMILIARITY WITH SPECIAL TECHNIQUES  
RECOMMENDED FOR APPLICATION TIMING AND TREATMENT  
EVALUATION. SEE GUIDE TO PRODUCT APPLICATION OR  
CONSULT LOCAL MOSQUITO ABATEMENT AGENCY.

## NET CONTENTS:

### PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**RECOMMENDED APPLICATIONS - Introduction:** Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

**METHODS OF APPLICATION - Aerial:** Use the recommended amount of Zoecon RF-379 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre (4.7-46.8 liters/hectare) is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-379 in the appropriate volume of water to give the rate per acre recommended below.

**APPLICATION RATE:** Apply 3/4 to 1 fl.oz. of Zoecon RF-379 per acre (55 to 73 ml/hectare) in water as directed.

**For Fleas:** Apply 1 fluid ounce of RF-379 per 1000 square feet in water as directed.

### MIXING AND HANDLING INSTRUCTIONS:

1. **SHAKE WELL BEFORE USING.** Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution.
2. Do not mix with oil; use clean equipment.
3. Partially fill spray tank with water; then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable.
4. Spray solution should be used within 48 hours; always agitate before spraying.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-379 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**APPLICATION SITES - Intermittently Flooded Noncrop Areas:** Zoecon RF-379 may be applied as directed above when flooding may result in floodwater mosquito hatch.

Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions. Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level.

**Crop Areas:** RF-379 may be applied to irrigated croplands after flooding to control mosquito emergence. Examples of such sites are vineyards, rice fields (including wild rice), date palm orchards, fruit and nut orchards and berry fields and bogs. Irrigated pastures may be treated after each flooding without removal of livestock.

**CHEMIGATION:** Refer to supplemental labeling entitled "Guide to Product Application" for use directions for chemigation. Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed.

**TANK MIXING INSTRUCTIONS:** RF-379 may be tank mixed with liquid *Bacillus thuringiensis* variety *israeliensis* (B.t.i.) formulations, such as **TEKNAR HP-D** (or its equivalent). The ratio of **TEKNAR HP-D** to RF-379 should range from 24:1 to 50:1 (volume/volume). For example, to prepare a 50:1 tank mix, add 1 gallon of RF-379 to 50 gallons of B.t.i. This tank mix can be applied to sites listed above at rates of 2-16 fluid ounces/acre (0.15-1.2 liters/hectare).

**For Fleas Outdoors:** Apply 1 ounce of RF-379 in 20 gallons of water to every 1000 square feet of residential turf. Pay particular attention to areas where pets frequent, such as, in and around dog houses and runs, and around shrubs, outside decks, and porches.

When using a hose-end sprayer, place required amount of RF-379 in bottle, add at least an equal amount of water and apply at low pressure, making sure to apply at 1 ounce of RF-379 per 20 gallons of water.

A conventional adulticide labeled for outdoor flea control [such as Yardex] should be used with RF-379 if a large population of fleas is present.

**STORAGE & DISPOSAL:** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-446  
U.S. Pats. 3,904,662; 3,912,815  
0291-C-0145E

EPA Est.  
© 1989 Zoecon  
Made in U.S.A.

# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

PREVENTS EMERGENCE OF ADULT FLOODWATER MOSQUITOES

## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-379, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-379 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides. Zoecon RF-379 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-379 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides. After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not breed. Because the effect of Zoecon RF-379 is neither larval death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

The information presented herein, while not guaranteed, is to the best of our knowledge true and accurate. No warranty or guarantee, express or implied, is made regarding the performance or stability of any product, since the manner of use and conditions of storage and handling are beyond our control.

0291-C:0192E

### Preparation of ALTOSAND® Granular Formulation

#### An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredient reaches the water where it is released from the sand.

ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100 lb. batch of ALTOSAND:

99 lbs. washed, dry sand (20-45 mesh)  
0.5 lbs. Zoecon RF-379 (7.5 fluid oz./lb.)  
0.5 lbs. HiSil 233 (silicon dioxide)  
Small Funnel  
Cement Mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer, place 99 lbs. of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 lbs. (7.5 fl.oz.) of Zoecon RF-379 onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379 (usually 5 to 10 minutes).
4. Stop the mixer and add 0.5 lbs. of HiSil 233. Cover the mixer to reduce dust. Start the mixer and run for approximately 5 minutes. (The quantity of HiSil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture of the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in Step No. 1. Add more HiSil if it flows significantly slower and reduce the amount of HiSil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of 8 to 10 lbs. of the final mixture per acre, using standard granular dispersal equipment.

### CHECK LIST

Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

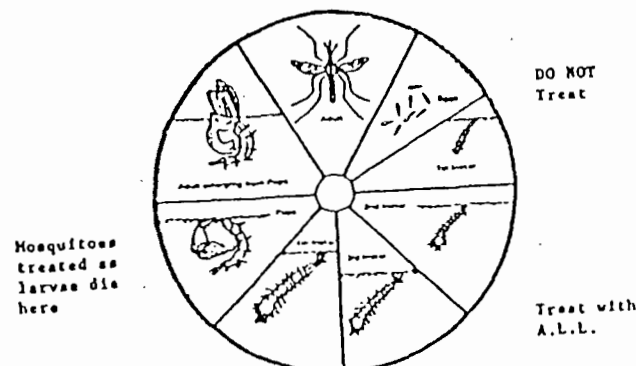
DO the following:

1. DO treat second, third and/or fourth instar larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

### LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20



**Chemigation:** Apply this product only through flood (basin), furrow or border irrigation systems. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

**Flood (Basin), Furrow and Border Chemigation:** Systems using gravity flow pesticide dispensing system must meter the pesticide the water at the head of the field and downstream of a hydraulic continuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where the pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

A pesticide supply tank is recommended for the application of product by chemigation.

Apply product continuously for the duration of water application.



Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

10 April 1991

Edith Minor  
Team Leader  
Front End Processing Staff  
Registration Support Branch  
Registration Division (H7505C)  
U.S. Environmental Protection Agency  
Office of Pesticide Programs (CAN/WD)  
Room 266A, Crystal Mall Bldg. 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

RE: Withdrawal of Petition Number 1F3970

Dear Ms. Minor:

Zoecon Corporation wishes to withdraw Petition Number 1F3970. Since the EPA issued the Reregistration Eligibility Document (RED) for methoprene, this petition is no longer necessary. Page 10 of the RED states, "The mosquito vector control uses that were exempt from the requirement of a tolerance under 40 CFR 180.1033 and 185.4150, are now considered non-food uses. Thus the exemptions are no longer applicable and will be revoked." We plan to resubmit this petition as a label amendment.

Because this was the Agency's decision to revoke the exemptions, please refund our \$9200, submitted in support of this petition.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

**Zoecon Corporation**

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

3 April 1991

Edith Minor  
Team Leader  
Front End Processing Staff  
Registration Support Branch  
Registration Division (H7504C)  
U.S. Environmental Protection Agency  
Crystal Mall, Bldg. 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

RE: RF-379 Mosquito Growth Regulator SR-20  
EPA Reg. No. 2724-446  
Rejection of Application No. 143315 due to noncompliance with PR Notice 86-5

Dear Ms. Minor:

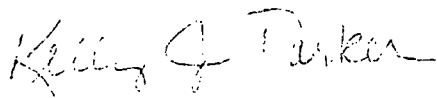
The application for the subject product is being resubmitted for review.

I have signed the statement of confidentiality claim.

The supplemental confidentiality claim does follow guidance from PR Notice 86-5 and can be found on page 3 of 6 of the confidential attachment.

The GLP statement, normally page 3, is not necessary for this type of efficacy study. As defined in the Federal Register notice dated 17 August 1989, the final rule, §160.3 states that only product performance studies as required by 40 CFR §158.640 are considered "studies". Further, §160.12 states that "...data from a study to which this part applies shall include in the application a true and correct statement, signed by the applicant, the sponsor, and the study director...." Since the data submitted with this application do not adhere to the definition of a study under GLP regulations, the GLP statement is not required.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

03/20/91

KELLY J. PARKER  
ZOECON CORPORATION  
12200 DENTON DRIVE  
DALLAS TX 75234

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

Product Name: RF-379 MOSQUITO GROWTH REGULATOR SR-20  
Company Name: ZOECON CORPORATION  
Application No.: 143315  
EPA Reg. No.: 2724-446  
EPA Receipt Date: 03/12/91



Subject: Front End Screen for an Amendment

Dear Sir or Madam:

Your request for registration has failed to pass the Agency's front-end screening process for the following reason(s), and is being returned to you. No further action on your request can be taken until you bring it into compliance with Agency regulations.

- A. Problems with your Application include:
- B. Data accompanying request failed data screen, see attached.

Sincerely,

*Edith Mines*

Team Leader  
Front End Processing Staff  
Registration Support Branch  
Registration Division (H7504C)

U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs

ZOECON INDUSTRIES, INC.  
12200 DENTON DRIVE  
DALLAS, TX 75234

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your transmittal of 03/12/91. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

The data accompanying your application do not meet the standards for data submission contained in PR Notice 86-5. Deficiencies which you will have to correct before resubmitting the application package are listed below. Any comments which apply to your data submission as a whole appear immediately following this paragraph. Comments which apply to a particular study appear opposite the study identifier found on the enclosed copy of your transmittal bibliography. When you resubmit your application we will check the data again for compliance with the requirements of PR Notice 86-5.

If you don't understand these comments about your data, you can get help by calling (703) 557-3240 and asking for 86-5 assistance.

Rejected study [01] :

\* You failed to sign the statement of data confidentiality claims included in the study.

A statement of compliance or non-compliance with the Good Laboratory Practices Standards contained in 40 CFR 160 is required for all studies (except range finding studies and supplements to previously submitted studies) submitted to EPA. This statement must appear as page 3 of all studies, and must be signed and dated by the study sponsor, the study submitter, and the study director. Please see 40 CFR 160.12 for specific guidance.

If you wish to make a claim of confidentiality for any portion of a submitted study other than described by FIFRA section 10 (d)(1)(a), (b), or (c), see PR Notice 86-5, pages 8 and 14 for guidance on preparing a supplemental statement of data confidentiality claims.



Supplemental Statements of Data Confidentiality Claims  
must be signed and dated and must include the typed  
name of the official who signed it.

## Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

8 March 1991

Mr. Phil Hutton  
Product Manager (17)  
Insecticide-Rodenticide Branch  
Registration Division (H7505C)  
U.S. Environmental Protection Agency  
Crystal Mall, Bldg. 2  
1921 Jefferson Davis Hwy.  
Arlington, VA 22202

RE: Zoecon RF-379 Mosquito Growth Regulator, EPA Reg. No. 2724-446  
Amendment to Add Outdoor Flea Use

Dear Mr. Hutton:

We have the opportunity to market an outdoor flea control product containing (S)-methoprene. Zoecon RF-379 is a microencapsulated product, thus allowing slow-release and protection of (S)-methoprene.

Efficacy data are provided supporting the outdoor use of this product at a rate one fluid ounce per 1000 square feet of yard (6 mg a.i./sq. ft. of surface area). The data were generated on ALTOSID Liquid Larvicide (A.L.L.), EPA Reg. No. 2724-392, containing 5% (S)-methoprene. Zoecon RF-379 is the same as A.L.L. except RF-379 contains 20% (S)-methoprene. The RF-379 is a more economical product since it is more concentrated; therefore, it was chosen over the A.L.L. as the product to take to market. Reg (01)

The current label addresses only mosquito use. The flea control use would be alternate language to the mosquito use language. Therefore, the flea-use label as marketed would consist of the following information:

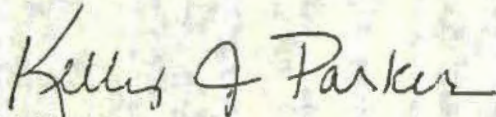
- |  |                                    |
|--|------------------------------------|
| 1. Name (without mosquito growth regulator) - e.g. "YardCor" | 5. Directions for Use Heading      |
| 2. Flea Claims - Three claims related to fleas               | 6. Application Rate for fleas      |
| 3. Ingredient statement & Net Wt.                            | 7. Mixing and Handling Instruction |
| 4. Precautionary Statements                                  | 8. Directions for flea use         |
|  | 9. Storage and Disposal            |
|  | 10. Administrative information     |

I've highlighted the new language related to the flea use and blocked the flea-use areas noted above on a label for reference.

To streamline the label, we changed the heading, "Instructions for Use" to "Mixing and Handling Instructions", a more appropriate heading. We have moved these instructions after the "Application Rate" section. We have deleted the old mixing and handling instructions section since it is a reiteration of the instructions already provided.

Chemigation instructions have been added to the Guide to Product Application in reference to the mosquito use. This is the standard referral statement from PR Notice 87-1. The flea-use product will be used only on residential yards; therefore, the chemigation statement will not be included in the flea-use label.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

2724-44c

MAR 19 1991

OFFICE OF  
PESTICIDES AND TOXIC  
SUBSTANCES

Ms. Kelly J. Parker  
Regulatory Specialist  
Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, TX 75234



Dear Ms. Parker:

Subject: Pesticide Petition No. 1F3970

This is in response to your letter of March 1, 1991, submitting a petition for exemption from requirement of tolerance for methoprene in or on vineyards, date palm orchards, nut and fruit orchards, rice fields and berry fields and bogs.

The petition is designated Pesticide Petition No. 1F3970. The Product Manager (PM) assigned the above chemical is Phil Hutton. (PM-17)

If you have further questions regarding this petition please contact me at (703) 557-8978 or FAX (703) 557-3106.

WITTED  
NON-CRSP  
JST

Sincerely,

*Edith Minor*

Edith Minor, Team Leader  
Front End Processing Staff  
Registration Support Branch  
Registration Division (H7505C)



## Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

8 March 1991

Mr. Phil Hutton  
Product Manager (17)  
Insecticide-Rodenticide Branch  
Registration Division (H7505C)  
U.S. Environmental Protection Agency  
Crystal Mall, Bldg. 2  
1921 Jefferson Davis Hwy.  
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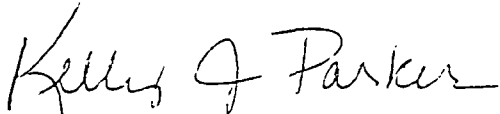
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| 3. Ingredient statement & Net Wt.                            | 7. Mixing and Handling Instruction |
| 4. Precautionary Statements                                  | 8. Directions for flea use         |
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Chemigation instructions have been added to the Guide to Product Application in reference to the mosquito use. This is the standard referral statement from PR Notice 87-1. The flea-use product will be used only on residential yards; therefore, the chemigation statement will not be included in the flea-use label.

Best regards,

A handwritten signature in cursive script that reads "Kelly J. Parker".

Kelly J. Parker  
Regulatory Specialist  
800/527-0512

# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

[ ] INDICATES OPTIONAL WORDING\*

PREVENTS EMERGENCE OF ADULT FLOODWATER MOSQUITOES

Outdoor flea control available through PCO's  
Prevents emergence of adult fleas up to 8 weeks outdoors  
Biorational [approach to] flea control outdoors

## ACTIVE INGREDIENT:

(S)-Methoprene [isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-  
dodecadienoate].....

20.0%

INERT INGREDIENTS.....

80.0%

Formulation contains 1.72 lb/gal (205.2 g/l) active ingredient

KEEP OUT OF REACH OF CHILDREN

## CAUTION

See Back Panel For Additional Precautionary Statements

BECAUSE OF THE UNIQUE MODE OF ACTION OF ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20, SUCCESSFUL USE REQUIRES FAMILIARITY WITH SPECIAL TECHNIQUES RECOMMENDED FOR APPLICATION TIMING AND TREATMENT EVALUATION. SEE GUIDE TO PRODUCT APPLICATION OR CONSULT LOCAL MOSQUITO ABATEMENT AGENCY.

NET CONTENTS:

## PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**RECOMMENDED APPLICATIONS - Introduction:** Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

**METHODS OF APPLICATION - Aerial:** Use the recommended amount of Zoecon RF-379 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre (4.7-46.8 liters/hectare) is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-379 in the appropriate volume of water to give the rate per acre recommended below.

**APPLICATION RATE:** Apply 3/4 to 1 fl.oz. of Zoecon RF-379 per acre (55 to 73 ml/hectare) in water as directed.

For fleas: apply 1 fluid ounce of RF-379 per 1000 square feet in water as directed.

## MIXING AND HANDLING INSTRUCTIONS:

1. **SHAKE WELL BEFORE USING.** Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution.
2. Do not mix with oil; use clean equipment.
3. Partially fill spray tank with water; then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable.
4. Spray solution should be used within 48 hours; always agitate before spraying.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-379 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**APPLICATION SITES - Pastures:** Zoecon RF-379 may be applied after each flooding without removal of livestock. **Rice:** Zoecon RF-379 must be applied to 2nd, 3rd and/or 4th instar larvae of mosquito found rice, usually within 4 days after flooding. Use only where multiple flooding rice culture is practical. Zoecon RF-379 treatment may be repeated with each flooding. Do not apply after rice reaches the heading stage of growth.

**Intermittently Flooded Noncrop Areas:** Zoecon RF-379 may be applied as directed above when flooding may result in floodwater mosquito hatch. Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions. Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level.

**CHEMIGATION:** Refer to supplemental labeling entitled "Guide to Product Application" for use directions for chemigation. Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed.

**For Fleas Outdoors:** Apply 1 fluid ounce of RF-379 in 20 gallons of water to every 1000 square feet. Pay particular attention to areas where pets frequent, such as, in and around dog houses and runs, and around shrubs and outside decks, and porches.

When using a hose-end sprayer, place required amount of RF in bottle, add at least an equal amount of water and apply at pressure, making sure to apply at 1 ounce of RF-379 per 20 gal. of water.

A conventional adulticide labeled for outdoor flea control [such as Yardex,] can be used with RF-379.

**For Outdoor Use Only:** Use care when treating around lawn furniture and outdoor carpeting. This product may stain these items.

**STORAGE & DISPOSAL:** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Store in cool place, away from children. Do not reuse empty container. Wrap and put in trash.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-446  
U.S. Pats. 3,904,662; 3,912,815  
0291-C-0193E

EPA Est  
© 1989 Zoecon  
Made in U.S.A.



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460

Application for Pesticide:

☐ Registration  
☒ Amendment

OPP Identifier Number

143315

## Section I

1. Company/Product Number 2724-445  
2. Date 8 March 1991  
3. Product Manager Hutton/17  
4. Proposed Classification ☒ General ☐ Restricted

5. Name and Address of Applicant (Include ZIP Code)

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, TX 75234

☐ Check if this is a new address

6. Product Name

Zoecon RF-379 Mosquito Growth Regulator SR-20

## Section II - Amendment Information

1. Subject ☐ Resubmission in response to Agency letter ☐ Final printed label in response to Agency letter ☒ Other (explain below) Date of Letter

Amendment to Add Outdoor Flea Use

## Section III

1. Material This Product Will Be Packaged In  
Child-Resistant Packaging ☐ Yes ☒ No  
Unit Packaging ☐ Yes ☒ No  
If "Yes," Unit package wgt No. per container  
Water-Soluble Packaging ☐ Yes ☒ No  
If "Yes," Package weight No. per container  
2. Type of Container ☒ Metal ☒ Plastic ☐ Glass ☐ Paper ☐ Other (Specify)  
3. Location of Net Contents Information ☒ Label ☐ Container  
4. Size(s) of Retail Container 1 oz. to 55 gallon  
5. Location of Label Directions ☒ On Label ☒ On material accompanying product  
6. Manner in Which Label Is Affixed To Product ☐ Lithograph ☒ Paper glued ☐ Other (Specify) ☐ Stenciled

## Section IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application).

Name

Kelly J. Parker

Title Regulatory Specialist Telephone No. (Include Area Code) 214/886-8726  
6. Date Application Received (Stamped)

## Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature Kelly J. Parker  
3. Title Regulatory Specialist  
4. Typed Name Kelly J. Parker  
5. Date Signed 3/8/91



Zoecon Corporation

A SANDOZ Company

12200 Denton Drive, Dallas, Texas 75234, (214) 243-2321

1 March 1991

Mr. Phil Hutton  
Product Manager (17)  
Insecticide-Rodenticide Branch  
Registration Division (H7505C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall, Bldg. 2  
1921 Jefferson Davis Hwy.  
Arlington, VA 22202

RE: ALTOSID Liquid Larvicide, EPA Reg. No. 2724-392  
Zoecon RF-379 Mosquito Growth Regulator SR-20, EPA Reg. No. 2724-446

Dear Mr. Hutton:

The undersigned, Kelly J. Parker, submits this petition pursuant to section 408(d)(1) of the Federal Food, Drug, and Cosmetic Act with respect to the pesticide chemical (S)-methoprene, EPA Reg. No. 2724-442.

Methoprene (a.k.a. racemic methoprene or (R,S)-methoprene) and (S)-methoprene, the optically active isomer of methoprene, have been "officially blessed" as biochemicals. Therefore, we understand our petition will be expedited.

Enclosed in quadruplicate are the following in support of an exemption from the requirement of a tolerance for use in vineyards, date palm orchards, nut and fruit orchards, rice fields and berry fields and bogs.

Section B: Labeling  
Section E: Practical Methods of Removing Residue  
Section F: Proposal for Exemption from the Requirement of a Tolerance  
Section G: Reasonable Grounds in Support of the Petition

Data for the active ingredient relevant to Section A (Chemistry Data) and Section C (Safety Data) of this petition are already on file with the Agency. In fact, a Standard was issued for the active ingredient methoprene in 1982. The RED document for the active is about to be issued. For the end-use products, a listing of the MRID numbers applicable to Section A and C is attached to this letter. Zoecon RF-379 is the end-use label for ALTOSID Larvicide Concentrate, EPA Reg. No. 2724-393.

Data that would be included as Section D are not applicable to this petition (see Section F).

Use of methoprene on rice fields and pastures is already exempt from the requirement of a tolerance. We would just like to add the crop areas listed above in connection with use to control mosquitoes. These areas are flooded and become prime mosquito breeding sites. Applications to floodwater in these areas would control floodwater mosquitoes.

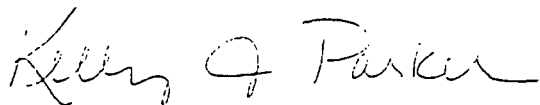
We would like to amend the language in 40 CFR § 180.1033 to:

"The insect growth regulator methoprene (isopropyl (E,E)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoate) and (S)-methoprene (isopropyl (2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoate) are exempt from the requirement of a tolerance in or on the raw agricultural commodities eggs: the fat, meat, and meat by-products of goats, hogs, horses, poultry, and sheep; fish, forage grasses; forage legumes; rice fields (including wild rice); rice straw; and shellfish; when used on pastures, marshlands and other non-crop areas to control floodwater mosquitoes; and when used in crop areas such as vineyards, date palm orchards, fruit and nut orchards, and berry fields and bogs to control floodwater mosquitoes.

We would like to amend the language in 40 CFR § 185.4150 to:

"(a) The insect growth regulator methoprene (isopropyl (E,E)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoate) and (S)-methoprene (isopropyl (2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoate) are exempt from the requirement of a tolerance in potable water when used on pastures, rice fields (including wild rice), marshlands, and other noncrop areas to control floodwater mosquitoes; and when used in crop areas such as vineyards, date palm orchards, fruit and nut orchards, and berry fields and bogs to control floodwater mosquitoes."

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

Certification with Respect to  
Citation of DataForm Approved  
OMB No. 2070-0060  
Approval expires 9-30-90

Applicant's Name and Address

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, TX 75234

EPA File Symbol/Registration Number

2724-

Product Name

(S)-Methoprene

Date of Application

1 March 1991

1. This application is supported by all data submitted or cited in the application. In addition, if cite-all options are indicated, this application is supported by all data in the Agency's files that concern the properties or effects of this product or of any other product that is identical or substantially similar, and that is one of the types of data that would be required to be submitted if this application sought the initial registration of a product of identical or similar composition and intended uses under the data requirements in effect on the date of approval of this application.

2. I certify that, for each study cited in support of this application for registration that is an exclusive use study, I am the original data submitter, or have obtained the written permission of the original data submitter to cite that study.

3. I certify that, for each study cited in support of this application for registration that is not an exclusive use study:

I am the original data submitter; or I have obtained the written permission of the original data submitter to cite that study; or

I have notified in writing the companies who have submitted data I have cited to support this application and have offered to: (a) Pay compensation for those data in accordance with section 3(c)(1)(D) and 3(c)(2)(D) of the Federal Insecticide, Fungicide and Rodenticide Act; and (b) Commence negotiations to determine which data are subject to the compensation requirement of FIFRA and the amount and terms of compensation due, if any. The companies I have notified are: *(Check one)*

☐ All companies listed on the Pesticide Data Submitters List for all active ingredients contained in my product (cite-all method or cite-all option under Selective Method). *(Also sign the General Offer to Pay Statement below.)*

☒ Those companies who have submitted the studies which I have cited (Selective method).

Signature

Name and Title

Kelly J. Parker  
Regulatory Specialist

Date

1 March 1991

General Offer to Pay: I hereby offer and agree to pay compensation to other persons, with regard to the approval of this application, to the extent required by FIFRA sec. 3(c)(1)(D) and 3(c)(2)(D).

Signature

Name and Title

Date



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460

Application for Pesticide: ☐ Registration  
☒ Amendment

OPP Identifier Number

143314

## Section I

1. Company/Product Number 2724- 2. Date March 1, 1991 3. Product Manager Hutton/17 4. Proposed Classification ☒ General ☐ Restricted

5. Name and Address of Applicant (Include ZIP Code)

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, TX 75234

☐ Check if this is a new address

6. Product Name

(S)-Methoprene

## Section II - Amendment Information

1. Subject ☐ Resubmission in response to Agency letter ☐ Final printed label in response to Agency letter ☒ Other (explain below) Date of Letter

Petition for an Exemption from the Requirement of a Tolerance

## Section III

1. Material This Product Will Be Packaged In 2. Type of Container

Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes," Unit package wgt No. per container	Water-Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes," Package weight No. per container	<input checked="" type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify)
--	--	---	--

3. Location of Net Contents Information 4. Size(s) of Retail Container

☒ Label ☐ Container 1 oz to 55 gallon

5. Location of Label Directions 6. Manner in Which Label Is Affixed To Product

☒ On Label ☐ On material accompanying product ☐ Lithograph ☒ Paper glued ☐ Other (Specify)  
☒ Stenciled

## Section IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application).

Name

Kelly J. Parker

Title

Regulatory Specialist

Telephone No. (Include Area Code)

214/888-8726

6. Date Application Received (Stamped)

## Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature

*Kelly J. Parker*

3. Title

Regulatory  
Specialist

4. Typed Name

Kelly J. Parker

5. Date Signed

March 1, 1991



Physical and Chemical Properties  
Submitted in Support of Full Registration  
of ALTOSID Liquid Larvicide  
by

TABLE 1A

Zoecon Corporation  
Tabular Summary of Physical and Chemical Properties for the Insect Growth Regulator  
ALTOSID Liquid Larvicide

TEST	RESULTS	YEAR	LABORATORY	DATE OF EPA SUBMISSION, ACCESSION NUMBER AND PAGE NUMBER
Physical and Chemical (EP) Properties	N/A	1984	Zoecon Corp.	256209
(TGA)	N/A	1984	Zoecon Corp.	256209

Physical and Chemical Properties  
Submitted in Support of Full Registration  
of ALTOSID Liquid Larvicide

TABLE 1B

by  
Zoecon Corporation

Tabular Summary of Physical and Chemical Properties for the Insect Growth Regulator  
ALTOSID Larvicide Concentrate

TEST	RESULTS	YEAR	LABORATORY	DATE OF EPA SUBMISSION, ACCESSION NUMBER AND PAGE NUMBER
Physical and Chemical (MP) Properties	N/A	1984	Zoecon Corp.	256304
(TGA)	N/A	1984	Zoecon Corp.	256304

Toxicology Data Submitted in Support of  
Application for Full Registration of ALTOSID Liquid Larvicide and  
ALTOSID Larvicide Concentrate  
by  
Zoecon Corporation  
Tabular Summary of Mammalian Toxicity Data for the Insect Growth Regulator  
Racemic Methoprene Technical

TABLE II

TEST	RESULTS	YEAR	LABORATORY	DATE OF EPA SUBMISSION, ACCESSION NUMBER AND PAGE NUMBER		
Hormone Bioassay - Mouse & Rat	No hormonal (mammalian endocrine) activity. No estrogenic, androgenic, anabolic, or glucocorticoid activity.	1974	Syntex	Dec. 1972	093595	C-12
Acute Oral - Rat	LD <sub>50</sub> > 34,600 mg/kg (HDT*)	1972	SRI	Dec. 1972	093595	C-30
Acute Oral - Dog	LD <sub>50</sub> > 5000 < 10,000 mg/kg	1972	Syntex	Dec. 1972	093595	C-51
Acute Dermal - Rabbit	LD <sub>50</sub> > 3038 < 10,250 mg/kg	1972	IBT (validated)	Dec. 1972	093595	C-191
Eye Irritation - Rabbit	Nonirritating.	1973	Syntex	Dec. 1972	093595	C-171
Primary Skin Irritation - Rabbit	Primary Irritation score: 0.0 (Nonirritating).	1973	Syntex	Dec. 1972	093595	C-183
Skin Sensitization - Guinea Pig	Nonsensitizing.	1975	Nomura	1981	unknown	N/A
Acute Aerosol Inhalation - Rat	LC <sub>50</sub> > 210 mg/liter (HDT*) (Classification: nontoxic)	1972	Hazleton	Dec. 1972	093595	C-279
Acute Aerosol Inhalation - Guinea Pig	LC <sub>50</sub> < 210 mg/liter (HDT*) (Classification: nontoxic)	1972	Hazleton	Dec. 1972	093595	C-284
Acute Intratracheal - Dog	No changes other than transient decrease in food consumption and body weight following 6 hour exposure to respirable mist. (maximum absorbed dose 30 mg/kg.)	1975	Nomura	Aug. 1978	234661	C-18
Acute Intraperitoneal - Rat	LD <sub>50</sub> = 4,800 mg/kg	1972	SRI	Dec. 1972	093595	C-159
Repeated Intraperitoneal - Rat	No cumulative effect at 3,000 mg/kg (HDT*).	1972	SRI	Dec. 1972	093595	C-166
14-Day Subchronic Oral - Rat	No effect at 20,000 ppm.	1972	SRI	Dec. 1972	093595	C-72
14-Day Subchronic Oral - Dog	Liver hypertrophy at 5,000 ppm and above. No other effects observed.	1972	SRI	Dec. 1972	093595	C-83
28-Day Subchronic Oral - Rat	No effect at 10,000 ppm.	1972	IBT (validated)	Dec. 1972	093595	C-98
28-Day Subchronic Oral - Mouse	No effect at 8,000 ppm.	1973	IRDC	Dec. 1973	092023	C-11
90-Day Subchronic Oral - Rat	No effect at 1,000 ppm.	1972	SRI	Dec. 1972	093595	C-111

Toxicology Data Submitted in Support of  
Application for Full Registration of ALTOSID Liquid Larvicide and  
ALTOSID Larvicide Concentrate  
by

TABLE II

Zoecon Corporation  
Tabular Summary of Mammalian Toxicity Data for the Insect Growth Regulator  
Racemic Methoprene Technical

TEST	RESULTS	YEAR	LABORATORY	DATE OF EPA SUBMISSION, ACCESSION NUMBER AND PAGE NUMBER		
90-Day Subchronic Oral - Dog	No effect at 500 ppm. Increased liver weight at 5,000 ppm.	1972	SRI	Dec. 1972	093595	C-11
21-Day Subchronic Dermal - Rabbit	No adverse effects at 400 mg/kg (HDT*).	1977	Nomura	1981	unknown	N/A
21-Day Subchronic Inhalation - Rat	No adverse effects at 20 mg/liter or 2,000 ppm (HDT*).	1972	Hazleton	Dec. 1972	093595	C-289
28-Day Subchronic Inhalation - Dog	No adverse effects at nebulized mist concentration of 0.0625 mg/kg/day (HDT*).	1975	Nomura	Aug. 1978	234661	C-48
Teratology - Mouse	No teratogenic effects at 600 mg/kg (HDT*).	1975	Nomura	Feb. 1980	242045	C-49
Teratology - Rabbit	No maternal or embryotoxic effects at 200 mg/kg. No teratogenic effects up to and including 2000 mg/kg (HDT*).	1975	Nomura	Feb. 1980	242045	C-20
3-Generation Reproduction - Rat	No effects at any dietary level including 2,500 ppm (HDT*) on adult food consumption, survival, fertility, pregnancy rate, gestation length. No effect on offspring viability at parturition, sex ratio, or offspring survival. No gross pathology.	1974	Bio/dynamics	Dec. 1974	127779	C-35
18-Month Dietary Chronic Toxicity/ Oncogenicity - Mouse	No effect on body weight, food consumption, or survival at any dose level including 2,500 ppm (HDT*). Neither compound-related tumorigenic effects nor gross pathological lesions were observed at any level. An unidentified brown pigment was observed upon microscopic examination in the livers of most mice treated at 2,500 ppm and a minority of mice treated at 1,000 ppm. The pigment was not found in the 250 group.	1974	IRDC	Jan. 1976	224155	C-162
2-Year Dietary Chronic Toxicity/ Oncogenicity - Rat	No changes related to compound were seen in general behavior or appearance, ophthalmoscopy, body weights, food consumption, or any clinical laboratory parameters. No compound related gross or histopathologic lesions, organ weight variations or tumorigenic effects were observed at dietary concentrations up to and including 5,000 ppm (HDT*).	1975	IRDC	Jan. 1976	224155	C-32

\* HDT = Highest Dose Tested (1002E)



Toxicology Data Submitted in Support of  
 Application for Full Registration of ALTOSID Liquid Larvicide and  
 ALTOSID Larvicide Concentrate  
 by  
 Zoecon Corporation  
 Tabular Summary of Mammalian Toxicity Data for the Insect Growth Regulator  
 (S)-Methoprene Technical

TABLE III

TEST	SAMPLE ID	RESULTS	YEAR	LABORATORY	DATE OF EPA SUBMISSION
					MRID NUMBER OR ACCESSION NUMBER
Acute Oral LD <sub>50</sub> - Rat	batch # 542-71 anal. # 0684044 90%	LD <sub>50</sub> > 5000 mg/kg (HDT)*	1984	SRI	256209
Acute Dermal LD <sub>50</sub> - Rabbit	batch #542-71 anal. # 0684044 90%	LD <sub>50</sub> > 5000 mg/kg (HDT)*	1985	SRI	Mar. 1985
Primary Eye Irritation - Rabbit	batch # 542-71 anal. # 068044 90%	Practically non-irritating (24 hr. primary eye irritation score = 1.7)	1984	SRI	256209
Primary Skin Irritation - Rabbit	batch # 542-71 anal. # 068044 90%	Non-irritating (primary irritation score = 0.0) score = 1.7)	1984	SRI	256209

\*Highest Dose Tested

Toxicology Data Submitted in Support of  
Application for Full Registration of ALTOSID Liquid Larvicide and  
ALTOSID Larvicide Concentrate  
by

Zoecon Corporation  
Tabular Summary of Mammalian Toxicity Data for the Insect Growth Regulator  
ALTOSID Liquid Larvicide

TABLE IVA

TEST	SAMPLE ID	RESULTS	YEAR	LABORATORY	DATE OF EPA SUBMISSION
					MRID NUMBER OR ACCESSION NUMBER
Acute Oral LD <sub>50</sub> - Rat	batch ZPA-2155	LD <sub>50</sub> > 5000 mg/kg (HDT)* (EPA Tox Category IV)	1984	Springborn Inst. for BioResearch	256209
Acute Dermal LD <sub>50</sub> - Rabbit	batch ZPA-2155	LD <sub>50</sub> > 5000 mg/kg (HDT) (EPA Tox Category IV)	1984	Springborn Inst. for BioResearch	Mar. 1985
Primary Eye Irritation - Rabbit	batch ZPA-2155	Practically non-irritating (24 hr. primary irritation score = 0.3) (EPA Tox Category III)	1984	Springborn Inst. for BioResearch	256209
Primary Skin Irritation - Rabbit	batch ZPA-2155	Slightly Irritating (Primary Irritation Index = 0.7) (EPA Tox Category IV)	1984	Springborn Inst. for BioResearch	256209
Acute Inhalation LD <sub>50</sub> - Rat	batch PA-2157	4 hr. LC <sub>50</sub> > 5.2 mg/l air (actual concentration, EPA Tox Category IV)	1984	Bio-Research	256209

\* Highest Dose Tested

Toxicology Data Submitted in Support of  
Application for Full Registration of ALTOSID Larvicide Concentrate  
by  
Zoecon Corporation  
Tabular Summary of Mammalian Toxicity Data for the Insect Growth Regulator  
ALTOSID SR-10 Mosquito Growth Regulator

TABLE IVB

TEST	RESULTS	YEAR	LABORATORY	DATE OF EPA SUBMISSION, ACCESSION NUMBER AND PAGE NUMBER		
Acute Oral - Rat	LD <sub>50</sub> > 10,000 mg/kg (HDT*) (EPA Tox Category IV)	1972	Syntex	Dec. 1972	033595	C-39
Acute Dermal - Rabbit	LD <sub>50</sub> > 21,000 mg/kg (HDT*) (EPA Tox Category IV)	1982	FDRL			
Acute Aerosol Inhalation - Rat	LC <sub>50</sub> > 208 mg/liter (HDT*) Classification: nontoxic (EPA Tox Category IV)	1973	Hazleton	Dec. 1973	3G1343	
Eye Irritation - Rabbit	Nonirritating. (EPA Tox Category IV)	1972	Syntex	Dec. 1972	093595	C-175
Primary Skin Irritation - Rabbit	Primary Irritation score: 0.0 (nonirritating) (EPA Tox Category IV)	1972	Syntex	Dec. 1972	093595	C-187

\*HDT = Highest Dose Tested

Toxicology Data Submitted in Support of  
 Application for Full Registration of ALTOSID Liquid Larvicide and  
 ALTOSID Larvicide Concentrate  
 by  
 Zoecon Corporation  
 Tabular Summary of Mammalian Toxicity Data for the Insect Growth Regulator  
 Racemic Methoprene Technical

TABLE V

TEST	RESULTS	YEAR	LABORATORY	DATE OF EPA SUBMISSION, ACCESSION NUMBER AND PAGE NUMBER	
Ames' <u>Salmonella</u> plate assay for	Negative in 5 strains with and without activation (0.2 to 20 pg/plate)	1979	U of Wisconsin	05018270	
Dose-Response Lethal Assay - Rat	Negative up to and including 2000 mg/kg (HDT*)	1973	Woodard	092023	C-88

\* HDT = Highest Dose Tested



Toxicology Data Submitted in Support of  
Application for Full Registration of ALTOSID Liquid Larvicide and  
ALTOSID Larvicide Concentrate

TABLE VI

by  
Zoecon Corporation  
Tabular Summary of Mammalian Toxicity Data for the Insect Growth Regulator  
(S)-Methoprene Technical

TEST	SAMPLE ID	RESULTS	YEAR	LABORATORY	DATE OF EPA SUBMISSION MRID NUMBER OR ACCESSION NUMBER
Ames' <u>Salmonella</u> plate assay	batch # 542-71 anal. # 0684044 90%	Negative in 5 strains with and without activation (10 - 10,000 pg/plate)	1984	SRI	256209
Yeast D, assay - <u>S. cerevisiae</u>	batch # 542-71 anal. # 068044 90%	Negative for all three end points (reverse mutation, gene conversion and mitotic crossing-over) with and without activation at con- centrations up to and including 5%.	1984	SRI	256209

# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

## PREVENTS EMERGENCE OF ADULT FLOODWATER MOSQUITOES

Prevents emergence of adult fleas up to 8 weeks outdoors  
Controls pre-adult fleas [larvae] up to 8 weeks.  
Biorational [approach to] flea control outdoors

### ACTIVE INGREDIENT:

(S)-Methoprene [Isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-  
dodecadienoate].....

20.0%

INERT INGREDIENTS.....

80.0%

Formulation contains 1.72 lb/gal (205.2 g/l) active ingredient

## KEEP OUT OF REACH OF CHILDREN

## CAUTION

See Back Panel For Additional Precautionary Statements

BECAUSE OF THE UNIQUE MODE OF ACTION OF ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20, SUCCESSFUL USE REQUIRES FAMILIARITY WITH SPECIAL TECHNIQUES RECOMMENDED FOR APPLICATION TIMING AND TREATMENT EVALUATION. SEE GUIDE TO PRODUCT APPLICATION OR CONSULT LOCAL MOSQUITO ABATEMENT AGENCY.

## NET CONTENTS:

### PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**RECOMMENDED APPLICATIONS - Introduction:** Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

**METHODS OF APPLICATION - Aerial:** Use the recommended amount of Zoecon RF-379 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre (4.7-46.8 liters/hectare) is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-379 in the appropriate volume of water to give the rate per acre recommended below.

**APPLICATION RATE:** Apply 3/4 to 1 fl.oz. of Zoecon RF-379 per acre (55 to 73 ml/hectare) in water as directed.

**For Fleas:** Apply 1 fluid ounce of RF-379 per 1000 square feet in water as directed.

### MIXING AND HANDLING INSTRUCTIONS:

1. **SHAKE WELL BEFORE USING.** Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution.
2. Do not mix with oil; use clean equipment.
3. Partially fill spray tank with water; then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable.
4. Spray solution should be used within 48 hours; always agitate before spraying.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-379 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**APPLICATION SITES - Intermittently Flooded Noncrop Areas:** Zoecon RF-379 may be applied as directed above when flooding may result in floodwater mosquito hatch.

Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions. Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level.

**Crop Areas:** RF-379 may be applied to irrigated croplands after flooding to control mosquito emergence. Examples of such sites are vineyards, rice fields (including wild rice), date palm orchards, fruit and nut orchards and berry fields and bogs. Irrigated pastures may be treated after each flooding without removal of livestock.

**CHEMIGATION:** Refer to supplemental labeling entitled "Guide to Product Application" for use directions for chemigation. Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed.

**TANK MIXING INSTRUCTIONS:** RF-379 may be tank mixed with liquid *Bacillus thuringiensis* variety *israeliensis* (B.t.i.) formulations, such as TEKNAR HP-D (or its equivalent). The ratio of TEKNAR HP-D to RF-379 should range from 24:1 to 50:1 (volume/volume). For example, to prepare a 50:1 tank mix, add 1 gallon of RF-379 to 50 gallons of B.t.i. This tank mix can be applied to sites listed above at rates of 2-16 fluid ounces/acre (0.15-1.2 liters/hectare).

**For Fleas Outdoors:** Apply 1 ounce of RF-379 in 20 gallons of water to every 1000 square feet of residential turf. Pay particular attention to areas where pets frequent, such as, in and around dog houses and runs, and around shrubs, outside decks, and porches.

When using a hose-end sprayer, place required amount of RF-379 in bottle, add at least an equal amount of water and apply at low pressure, making sure to apply at 1 ounce of RF-379 per 20 gallons of water.

A conventional adulticide labeled for outdoor flea control [such as Yardex] should be used with RF-379 if a large population of fleas is present.

**STORAGE & DISPOSAL:** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes the risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-446  
U.S. Pats. 3,904,662; 3,912,815  
0291-C:0145E

EPA Est  
© 1989 Zoecon  
Made in U.S.A.

# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

PREVENTS EMERGENCE OF ADULT FLOODWATER MOSQUITOES

## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-379, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-379 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides. Zoecon RF-379 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-379 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides. After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive. Because the effect of Zoecon RF-379 is neither larval death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

The information presented herein, while not guaranteed, is to the best of our knowledge true and accurate. No warranty or guarantee, express or implied, is made regarding the performance or stability of any product, since the manner of use and conditions of storage and handling are beyond our control.

0291-C-0192E

### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredient reaches the water where it is released from the sand.

ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100 lb. batch of ALTOSAND:

99 lbs. washed, dry sand (20-45 mesh)  
0.5 lbs. Zoecon RF-379 (7.5 fluid oz./lb.)  
0.5 lbs. HiSil 233 (silicon dioxide)  
Small Funnel  
Cement Mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer, place 99 lbs. of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 lbs. (7.5 fl.oz.) of Zoecon RF-379 onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379 (usually 5 to 10 minutes).
4. Stop the mixer and add 0.5 lbs. of HiSil 233. Cover the mixer to reduce dust. Start the mixer and run for approximately 5 minutes. (The quantity of HiSil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture of the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in Step No. 1. Add more HiSil if it flows significantly slower and reduce the amount of HiSil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of 8 to 10 lbs. of the final mixture per acre, using standard granular dispersal equipment.

### CHECK LIST

Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

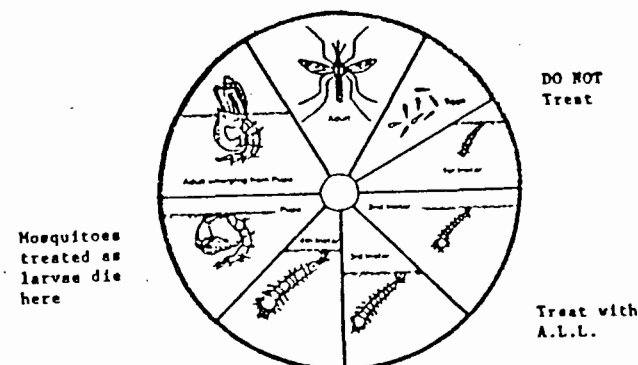
DO the following:

1. DO treat second, third and/or fourth instar larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

### LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20



**Chemigation:** Apply this product only through flood (basin), furrow or border irrigation systems. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or their experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

**Flood (Basin), Furrow and Border Chemigation:** Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where the pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

A pesticide supply tank is recommended for the application of product by chemigation.

Apply product continuously for the duration of water application.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

DEC 5 1990

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

Ms. Kelly Parker  
Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, TX 75234



Dear Ms. Parker:

Subject: Zoecon RF-379 Mosquito Growth Regulator SR-20  
EPA Registration No. 2724-446  
Your Submission Dated May 20, 1990

The labeling referred to above, submitted in connection with  
registration under the Federal Insecticide, Fungicide, and Rodenticide  
Act, as amended, is acceptable. A stamped copy is enclosed for your  
records.

Sincerely yours,

Phil Hutton  
Product Manager (17)  
Insecticide-Rodenticide Branch  
Registration Division (H7505C)

Enclosure

# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

Prevents Emergence of  
Adult Floodwater Mosquitoes

## ACTIVE INGREDIENT:

(S)-Methoprene [Isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-  
dodecadienoate]..... 20%  
INERT INGREDIENTS:..... 80%

Contains 1.72 lb/gal (205.2 g/liter) active ingredient

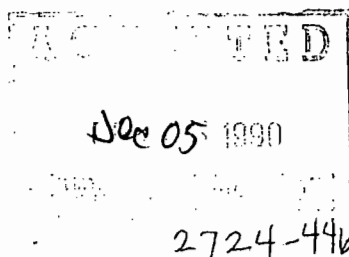
KEEP OUT OF REACH OF CHILDREN

## CAUTION

See Back Panel For Additional Cautions

Because of the unique mode of action of Zoecon RF-379 Mosquito Growth Regulator SR-20, successful use requires familiarity with special techniques recommended for application timing and treatment evaluation. See Guide to Product Application or consult local Mosquito Abatement Agency.

NET CONTENTS:



## PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**Instructions for Use -- 1. SHAKE WELL BEFORE USING.** Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution. 2. Do not mix with oil; use clean equipment. 3. Partially fill spray tank with water, then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable. 4. Spray solution should be used within 48 hours. Always agitate before spraying.

**RECOMMENDED APPLICATIONS -- Introduction:** Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

**Methods of Application -- Aerial:** Use the recommended amount of Zoecon RF-379 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-379 in the appropriate volume of water to give the rate per acre recommended below.

**Application Rate:** Apply 3/4 to 1 fl.oz. of Zoecon RF-379 per acre (55 to 73 ml/hectare) in water as directed.

**Application Sites -- Pastures:** Zoecon RF-379 may be applied after each flooding without removal of grazing livestock.

**Rice:** Zoecon RF-379 must be applied to 2nd, 3rd and/or 4th instar larvae of mosquitoes found in rice, usually within 4 days after flooding. Use only where multiple flooding rice culture is practiced. Zoecon RF-379 treatment may be repeated with each flooding. Do not apply after rice reaches the heading stage of growth.

**Intermittently Flooded Noncrop Areas:** Zoecon RF-379 may be applied as directed above when flooding may result in floodwater mosquito hatch. Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions. Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-379 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**Mixing and Handling Instructions:** 1. Add measured amount of Zoecon RF-379 to spray tank partially filled with water, mix and complete filling with recommended quantity of water. 2. Use diluted spray solution within 48 hours of mixing. Agitate before each use.

**STORAGE & DISPOSAL:** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer to recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-446  
U.S. Pats. 3,904,662; 3,912,815  
0590-B-0145E

EPA Est.  
c 1989 Zoecon  
Made in U.S.

## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-379, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-379 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides.

Zoecon RF-379 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-379 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides.

After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive.

Because the effect of Zoecon RF-379 is neither death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

### CHECKLIST

Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

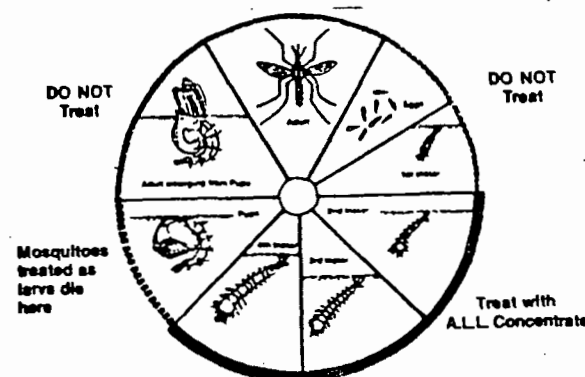
DO the following:

1. DO treat second, third and/or fourth larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas. They probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

## LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20



### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredients reach the water where they are released from the sand. ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100-pound batch of ALTOSAND:

- 99 lbs. washed, dry sand (20-45 mesh)
- 0.5 lbs. Zoecon RF-379, (7.5 fluid oz.)
- 0.5 lbs. Hsil 233 (silicon dioxide)
- Small funnel
- Cement mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer place 99 pounds of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 pound (7.5 fluid ounces) Zoecon RF-379, onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379, (usually five to ten minutes).
4. Stop the mixer and add 0.5 pound of Hsil 233. Cover the mixture to reduce dust. Start the mixer and run for approximately five minutes. (The quantity of Hsil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture on the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in step No. 1. Add more Hsil if it flows significantly slower and reduce the amount of Hsil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of eight to ten pounds of the final mixture per acre using standard granular dispersal equipment.

LOGGED ☐

FILE: 2724-393

Ali Conc Pending fedf

RECORD OF TELEPHONE CALL

☐ IN

☐ OUT

TIME: 11:10 am

DATE: 26 October 1988

PERSON TALKED WITH: Chris Dively

FIRM: EPA

PRODUCT: Altosid<sup>®</sup> Liquid Larvicide Concentrate

REGISTRATION NO.: 2724-393

SUBJECT: You can't have an end-use and a mfg-  
use product with the same Reg. no. You'll  
have to submit an application for a new  
registration - just reference 2724-393. (me-too)  
This will also require a \$4000 fee.

CC:

Sally

Lynn

SIGNATURE:

Kelly J Parker





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

SEP 19 1990

OFFICE OF  
PESTICIDES AND TOXIC  
SUBSTANCES



Ms. Kelly Parker  
Zoecon Corporation  
12005 Ford Road, Suite 800, LB 44  
Dallas, TX 75234-7296

Dear Ms. Parker:

Subject: Withdrawal of Duplicate Application  
Zoecon RF-379 Mosquito Growth Regulator SR-20  
EPA File Symbol 2724-UGO  
Your Letter Dated July 30, 1990

The application referred to above, submitted in connection with  
registration under the Federal Insecticide, Fungicide, and Rodenticide  
Act, as amended, has been withdrawn as per your request dated July 30,  
1990.

Sincerely yours,

Phil Hutton  
Product Manager (17)  
Insecticide-Rodenticide Branch  
Registration Division (H7505C)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

06/06/90



OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

Product Name: ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20  
Company Name: ZOECON CORPORATION  
Application No.: 135468  
EPA Reg. No.: 2724-446  
EPA Receipt Date: 06/06/90

Subject: Front End Screen for an Amendment

Dear Sir or Madam:

Your application for registration has been received by the Office of Pesticide Programs and has passed a preliminary screen for completeness. It will be placed in line for review to determine its acceptability. The application will be processed in chronological order of receipt.

Although the 1988 FIFRA amendments mandate EPA to review applications for expedited registration or amendments within 90 days, this turnaround time will not be met immediately due to the backlog of applications received before December 24, 1988. However, EPA is increasing human and automated resources and making necessary procedural changes in order to eliminate the backlog and to meet the 90-day response time as soon as possible.

If you have any questions, you may contact Phil Hutton, Product Manager 17, at (703)-557-2690.

Sincerely,

*Edith Minor*

Team Leader  
Front End Processing Staff  
Registration Support Branch  
Registration Division (H7304C)



United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460

OPP Identifier Number

Application for Pesticide: ☐ Registration  
☐ Amendment

135468

## Section I

1. Company/Product Number 2724-446	2. Date May 30, 1990	3. Product Manager Phil Hutton/17	4. Proposed Classification <input checked="" type="checkbox"/> General <input type="checkbox"/> Restricted
5. Name and Address of Applicant (Include ZIP Code) Zoecon Corporation A Sandoz Company 12200 Denton Drive Dallas, Texas 75234			
<input type="checkbox"/> Check if this is a new address			

6. Product Name  
Zoecon RF-379 Mosquito Growth Regulator SR-20

## Section II - Amendment Information

1. Subject <input type="checkbox"/> Resubmission in response to Agency letter <input checked="" type="checkbox"/> Final printed label in response to Agency letter <input type="checkbox"/> Other (explain below)	Date of Letter 5/22/90
--	---------------------------

## Section III

1. Material This Product Will Be Packaged In		2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes," Unit package wgt No. per container	Water-Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes," Package weight No. per container	<input checked="" type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify)
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) of Retail Container 1 gallon to 50 gallons	
5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On material accompanying product		6. Manner in Which Label is Affixed To Product <input checked="" type="checkbox"/> Lithograph <input type="checkbox"/> Other (Specify) <input checked="" type="checkbox"/> Paper glued <input checked="" type="checkbox"/> Stenciled	

## Section IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application).		
Name Kelly J. Parker		
Title Regulatory Specialist	Telephone No. (Include Area Code) 214/888-8726	6. Date Application Received (Stamped)
<p><b>Certification</b></p> <p>I certify that the statements I have made on this form and all attachments thereto are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.</p>		
2. Signature <i>Kelly J. Parker</i>	3. Title Regulatory Specialist	
4. Typed Name Kelly J. Parker	5. Date Signed May 30, 1990	

# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

Prevents Emergence of  
Adult Floodwater Mosquitoes

## ACTIVE INGREDIENT:

(S)-Methoprene [Isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-  
dodecadienoate]..... 20%  
INERT INGREDIENTS:..... 80%

Contains 1.72 lb/gal (205.2 g/liter) active ingredient

KEEP OUT OF REACH OF CHILDREN

## CAUTION

See Back Panel For Additional Cautions

Because of the unique mode of action of Zoecon RF-379 Mosquito Growth Regulator SR-20, successful use requires familiarity with special techniques recommended for application timing and treatment evaluation. See Guide to Product Application or consult local Mosquito Abatement Agency.

## NET CONTENTS:

### PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**Instructions for Use -- 1. SHAKE WELL BEFORE USING.** Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution. 2. Do not mix with oil; use clean equipment. 3. Partially fill spray tank with water, then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable. 4. Spray solution should be used within 48 hours. Always agitate before spraying.

**RECOMMENDED APPLICATIONS -- Introduction:** Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

**Methods of Application -- Aerial:** Use the recommended amount of Zoecon RF-379 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-379 in the appropriate volume of water to give the rate per acre recommended below.

**Application Rate:** Apply 3/4 to 1 fl.oz. of Zoecon RF-379 per acre (55 to 73 ml/hectare) in water as directed.

**Application Sites -- Pastures:** Zoecon RF-379 may be applied after each flooding without removal of grazing livestock.

**Rice:** Zoecon RF-379 must be applied to 2nd, 3rd and/or 4th instar larvae of mosquitoes found in rice, usually within 4 days after flooding. Use only where multiple flooding rice culture is practiced. Zoecon RF-379 treatment may be repeated with each flooding. Do not apply after rice reaches the heading stage of growth.

**Intermittently Flooded Wecrop Areas:** Zoecon RF-379 may be applied as directed above when flooding may result in floodwater mosquito hatch. Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions. Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-379 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**Mixing and Handling Instructions:** 1. Add measured amount of Zoecon RF-379 to spray partially filled with water, mix and complete filling with recommended quantity of water. 2. Use diluted spray solution within 48 hours of mixing. Agitate before each use.

**STORAGE & DISPOSAL:** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer to recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-446  
U.S. Pats. 3,904,662; 3,912,815  
0590-B-0145Z

EPA Est  
c 1989 Zoecon  
Made in U.S.A.



## FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-379, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-379 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides.

Zoecon RF-379 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-379 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides.

After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive.

Because the effect of Zoecon RF-379 is neither death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

## CHECKLIST

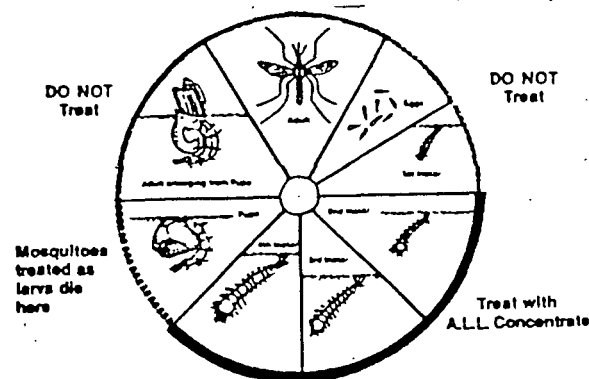
Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

DO the following:

1. DO treat second, third and/or fourth larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

LIFE CYCLE OF MOSQUITO  
WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

## Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

## INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredients reach the water where they are released from the sand. ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

## PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100-pound batch of ALTOSAND:

- 99 lbs. washed, dry sand (20-45 mesh)
- 0.5 lbs. Zoecon RF-379, (7.5 fluid oz.)
- 0.5 lbs. Hisil 233 (silicon dioxide)
- Small funnel
- Cement mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer place 99 pounds of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 pound (7.5 fluid ounces) Zoecon RF-379, onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379, (usually five to ten minutes).
4. Stop the mixer and add 0.5 pound of Hisil 233. Cover the mixture to reduce dust. Start the mixer and run for approximately five minutes. (The quantity of Hisil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture on the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in step No. 1. Add more Hisil if it flows significantly slower and reduce the amount of Hisil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

## APPLICATION RATE AND METHODS

Apply at a rate of eight to ten pounds of the final mixture per acre using standard granular dispersal equipment.

US ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF PESTICIDES PROGRAMS  
REGISTRATION DIVISION (75-767)  
WASHINGTON, DC 20460

EPA REGISTRATION NO.

2724-446

DATE OF ISSUANCE

MAY 22 1990

TERM OF ISSUANCE

NAME OF PESTICIDE PRODUCT

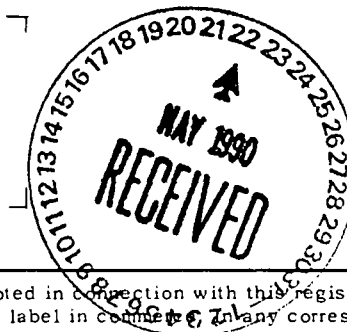
Zoecon RF-379 Mosquito  
Growth Regulator SR-20

NOTICE OF PESTICIDE: ☐ REGISTRATION  
☐ REREGISTRATION

(Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended)

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, Texas 75234



NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)C provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data.
2. Add the phrase "EPA Registration No. 2724-446" to your label before you release the product for shipment.
3. Change the front panel statement from "Because of the unique mode of action of A.L.L. Concentrate, ..." to read as follows:

"Because of the unique mode of action of Zoecon RF-379 Mosquito Growth Regulator SR-20, ..."

☐ ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL

See P. 2

DATE

5/22/90

- 2 -

4. Submit five (5) copies of your final printed labeling before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely,

A handwritten signature in dark ink, appearing to read "Phil Hutton". The signature is fluid and cursive, with the first name "Phil" being more prominent than the last name "Hutton".

Phil Hutton  
Product Manager (17)  
Insecticide/Rodenticide Branch  
Registration Division (H7505C)

Enclosure

# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

Prevents Emergence of  
Adult Floodwater Mosquitoes

## ACTIVE INGREDIENT:

(S)-Methoprene [Isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-

dodecadienoate]..... 20%  
INERT INGREDIENTS:..... 80%

Contains 1.72 lb/gal (205.2 g/liter) active ingredient

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

See Back Panel For Additional Cautions

Because of the unique mode of action of A.L.L.<sup>TM</sup> Concentrate, successful use requires familiarity with special techniques recommended for application timing and treatment evaluation. See Guide to Product Application or consult local Mosquito Abatement Agency.

**NET CONTENTS:**

ACCEPTED  
with COMMENTS  
in EPA Letter Dated:

MAY 22 1990

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act as  
amended, for the pesticide  
registered under EPA Reg. No.

2724-446

## PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**Instructions for Use -- 1. SHAKE WELL BEFORE USING.** Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution. 2. Do not mix with oil; use clean equipment. 3. Partially fill spray tank with water, then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable. 4. Spray solution should be used within 48 hours. Always agitate before spraying.

**RECOMMENDED APPLICATIONS -- Introduction:** Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

**Methods of Application -- Aerial:** Use the recommended amount of Zoecon RF-379 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-379 in the appropriate volume of water to give the rate per acre recommended below.

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**Rice:** Zoecon RF-379 must be applied to 2nd, 3rd and/or 4th instar larvae of mosquitoes found in rice, usually within 4 days after flooding. Use only where multiple flooding rice culture is practiced. Zoecon RF-379 treatment may be repeated with each flooding. Do not apply after rice reaches the heading stage of growth.

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**STORAGE & DISPOSAL:** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer to recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-  
U. S. Pats. 3,904,662; 3,912,815  
0189-A:0145E

EPA Est 55947-CA-1  
c 1985 Zoecon  
Made in U.S.A.



## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

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Because the effect of Zoecon RF-379 is neither death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

### CHECKLIST

Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

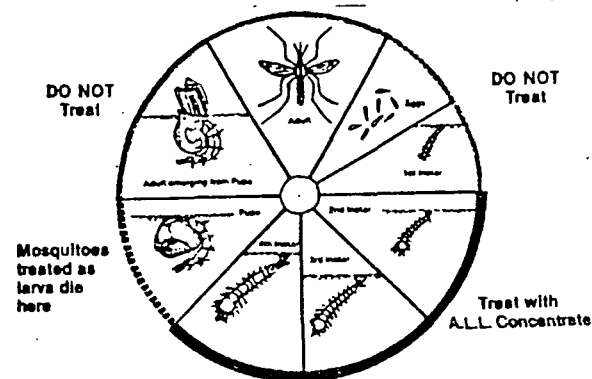
DO the following:

1. DO treat second, third and/or fourth larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

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3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

## LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20



### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredients reach the water where they are released from the sand. ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100-pound batch of ALTOSAND:

- 99 lbs. washed, dry sand (20-45 mesh)
- 0.5 lbs. Zoecon RF-379, (7.5 fluid oz.)
- 0.5 lbs. Hissil 233 (silicon dioxide)
- Small funnel
- Cement mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer place 99 pounds of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 pound (7.5 fluid ounces) Zoecon RF-379, onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379, (usually five to ten minutes).
4. Stop the mixer and add 0.5 pound of Hissil 233. Cover the mixture to reduce dust. Start the mixer and run for approximately five minutes. (The quantity of Hissil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture on the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in step No. 1. Add more Hissil if it flows significantly slower and reduce the amount of Hissil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of eight to ten pounds of the final mixture per acre using standard granular dispersal equipment.

**Zoecon Corporation**

*A SANDOZ Company*

12005 Ford Road, Suite 800, LB 44, Dallas, Texas 75234-7296

(214) 243-2321

11 May 1990

Mr. Phil Hutton  
Product Manager (17)  
Insecticide-Rodenticide Branch  
Office of Pesticide Programs (H7505C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

RE: Agenda for Meeting

Dear Mr. Hutton:

Following is my proposed agenda for the meeting on Tuesday, 22 May, at 10:30 a.m.

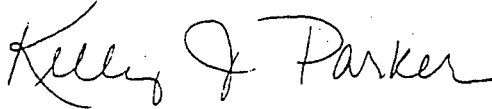
1. 2724-304: I will be submitting the residue study on the 22nd. Has an ADI been established? Do you know the status of the method validation work conducted at Beltsville? Assuming that this report is perfect, can you give me a ballpark estimate as to when we can receive the approval for the food handling establishment amendment? The tox and chemistry have already been reviewed with our previous submission.
2. 2724-UUA: This product, Zoecon RF-379 Mosquito Growth Regulator, passed the preliminary screen for an expedited review. The product was submitted 10/24/89. This is an important product for mosquito control. You thought this one was nearing completion when we met in April. Status?
3. 2724-UUT: This product, Zoecon RF-274 Combat Fogger, passed the preliminary screen for an expedited review. The product was submitted 11/7/89. You thought this one would take a little longer than 2724-UUA. Status?
4. 2724-361: You got the tox review back before our last meeting. May I pick up a stamped copy of the revised label?
5. 2724-360: We submitted a revised label 12/14/89 based on the tox for 2724-361. Since you got the tox review back, may I pick up a stamped copy of this label?
6. 2724-375 and 2724-421: We met with EPA (team 17 and EEB) on 6 March to discuss removal of the fish habitat statement. I formally submitted this request on 11 April. Anything we can do to expedite?

7. During our 11 April meeting, you said that you'd ask OCM for a written opinion regarding unit dose labeling. Have you heard anything, yet?

History: We currently have different unit dose bottles for each subregistration. A generic unit dose bottle would save substantially in production and inventory costs. I gave you examples of the current label with arrows pointing to areas that would be revised for generic labeling and a "cut and paste" version of a generic label. The generic bottle is in total compliance with guidance from Federal Register Notice Vol. 49, No. 188, Wednesday, September 26, 1984, Proposed Rules, §156.87 Unit packaging. This is the only guidance we can find specifically regarding unit packaging.

For your information, generic unit dose packaging is widely used in dog and cat collar packaging and contains minimal labeling, which is less than what we've proposed. I'll bring an example with me as it may give you and OCM a reference point.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512

MEETING MINUTES - 11 APRIL 1990

Attendees: Phil Hutton, PM-17  
Pat Bagley, Team 17  
Kelly Parker, Zoecon Corporation

The results of this meeting, in bold type, follow each agenda item.

**Miscellaneous information:** Delivered "AttaGirl" letter to Phil about Pat Bagley. He was pleased and said he'd put it into her file. I gave a copy to Pat. She was happy about it.

Learned that EPA has rented apartments down the street from Crystal Mall. The special review and reregistration division will have their offices there. This will mean more room for the registration division (will only have 2 people per office). The chemists will be moving to the second floor, which Phil says will give him more control over reviews. If true, good news for us.

Big meeting at EPA yesterday afternoon about R11. Looks like the decision from EPA will come from Linda Fisher. Fred Preiss and Bill Gullickson of MGK were in town for this meeting. Phil isn't sure what the decision will be, but is sure that it will be strictly political due to AgCanada's harsh assessment of R11. If EPA comes out with something less severe, they'll have to take the heat from the watchdogs, even if they have science to back them up. I'll call later to see what's happening.

1. Pick up registration for Zoecon RF-322 Ovicidal Pump Spray, EPA Reg. No. 2724-404. This is our replacement for a current registration containing Repellent 11.

Picked up registration and got the final label stamped. This registration was actually backdated 4/4/90.

2. 2724-UUA: This product, Zoecon RF-379 Mosquito Growth Regulator, passed the preliminary screen for an expedited review. The product was submitted 10/24/89. This is an important product for mosquito control.

This product went into review as soon as it was received by the EPA; therefore, I was told that it will be coming out shortly. (I expect shortly means within a month).

3. 2724-UUT: This product, Zoecon RF-274 Combat Fogger, passed the preliminary screen for an expedited review. The product was submitted 11/7/89.

This product didn't go into review until January; therefore, it will take another couple of months for review. Supposedly EPA is gaining on the backlog and soon, 90-day turnaround will mean 90-day turnaround.



4. 2724-UEO: This is Zoecon RF-330 ALTOSID Pellets. Original submission: 24 June 1988. This is another important product for mosquito control. During our meeting in February, y'all thought this was on Team 15; however, this is a methoprene-only product. Before that we heard it was in the chemistry queue. Do I need to resubmit? Where is this application?

Eureka! They not only found it, they've actually worked on it.. The problem with this file is that we used Cite-All and cited several registrations (e.g., racemic briquet, minikets, (S)-methoprene technical). We applied for registration in June 1988. Since this application, we canceled the minikets and the technical got transferred from SCPC to Zoecon. The chemist was not comfortable in recommending for registration of this product due to the loose ends.

I talked with Pat explaining the situation...and the fact that since submission, we got the (S)-methoprene briquet registered that they could reference. She asked Phil if they could register this product with the condition of sending in a data matrix. He said yes.

Another problem with the application is that we don't have the fish habitat statement on the proposed label. I agreed to put it on the label as a condition of the registration. They realize that we'll amend to remove that statement. With all of the conditions discussed, I asked when we might receive registration. Pat thought next week would be feasible.

5. 2724-361: We submitted tox and a revised label 10/30/87. I resubmitted this (because it was lost at the Agency) in June of 1988 and handed you another copy in November 1989. I formally resubmitted these data and received another set of MRID Numbers. Because we've been around the mulberry bush, so to speak, with this simple, albeit necessary amendment, is there any way to expedite the review?

The review came through...FINALLY! Pat hasn't had a chance to look at it yet, but it looks okay. Phil looked at the review and said it looked like they would accept the inhalation as supplemental only, but he couldn't elaborate. Pat said she'd write a letter and send us the review. She asked Phil if she could expedite this one for us, since we've been waiting for years (literally). He agreed. Once this one comes through, we'll be able to submit to CDFA for registration.

6. 2724-UEA: I submitted an efficacy protocol for Agency comments. This product is Zoecon RF-372 Collar. I was told that protocol reviews usually take a month. While I realize times given by EPA are estimates, this protocol has been with the Agency since 1/90.

I brought back comments on the protocol. Several of our claims won't be supported by the study, but I don't think that's a problem. Pat mentioned that she thought it was a good protocol. Phil is anxious to see the results of the study. Our label as submitted includes dogs and cats. The protocol was for dogs only. We will have to do a study on cats to get them approved on the label.

7. 2724-375 and 2724-421: We met with EPA (team 17 and EEB) on 6 March to discuss removal of the fish habitat statement. We will formally submit this request on 11 April.

I submitted this request. Phil said that they'd get together with EEB and talk about it once it came through the system to him.

8. I'd like a written opinion regarding unit dose labeling. We currently have different unit dose bottles for each subregistration. A generic unit dose bottle would save substantially in production and inventory costs. Enclosed as Item 1 is the current label with arrows pointing to areas that would be revised for generic labeling. Enclosed as Item 2 is a "cut and paste" version of a generic label. The generic bottle is in total compliance with guidance from Federal Register Notice Vol. 49, No. 188, Wednesday, September 26, 1984, Proposed Rules, §156.87 Unit packaging. This is the only guidance we can find regarding unit packaging.

Phil and Pat don't find a problem with our version of the generic labeling. However, as is the case whenever you ask for a written opinion, they weren't very comfortable. Phil said he'd ask OCM for a written opinion.

9. I'd also like an opinion on the distributor product name: TOTAL Flea Control. We've never had any comment from EPA regarding the Notice of Supplemental Registration of Distributor application, where the distributor name first appears.

I showed Phil the distributor app signed by Bill Chase of Chevron. He said he doesn't have a problem with a trademark like TOTAL or SAFER. But a claim saying "total flea control" is misleading. As long as there's a TM or an R behind the word, there's no problem. Opportunities for our marketing group?????

10. Can we use the recycling symbol (arrows arranged in a triangle) on our products?

Yes, for those products that say to recycle in the disposal section (e.g., Lintox-D). For other products (i.e., household), we need to be real clear and say to recycle with other pesticide containers, so the fogger can isn't thrown in with the COKE cans. In some places, they have specified locations and days for pesticide container recycling.

**Zoecon Corporation**

A SANDOZ Company

12005 Ford Road, Suite 800, LB 44, Dallas, Texas 75234-7296

(214) 243-2321

26 March 1990

Mr. Phil Hutton  
Product Manager (17)  
Insecticide-Rodenticide Branch  
Office of Pesticide Programs (H7505C)  
U.S. Environmental Protection Agency  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

RE: Agenda for Meeting

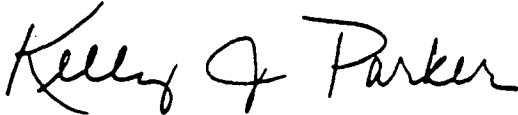
Dear Mr. Hutton:

Following is my proposed agenda for the meeting on Wednesday, 11 April, at 10:30 a.m. Notice that the first item is an action item and the rest are listed for information gathering purposes.

1. Pick up registration for Zoecon RF-322 Ovicidal Pump Spray, EPA Reg. No. 2724-404. This is our replacement for a current registration containing Repellent 11.
2. 2724-UUA: This product, Zoecon RF-379 Mosquito Growth Regulator, passed the preliminary screen for an expedited review. The product was submitted 10/24/89. This is an important product for mosquito control.
3. 2724-UUT: This product, Zoecon RF-274 Combat Fogger, passed the preliminary screen for an expedited review. The product was submitted 11/7/89.
4. 2724-UEO: This is Zoecon RF-330 ALTOSID Pellets. Original submission: 24 June 1988. This is another important product for mosquito control. During our meeting in February, y'all thought this was on Team 15; however, this is a methoprene-only product. Before that we heard it was in the chemistry queue. Do I need to resubmit? Where is this application?
5. 2724-361: We submitted tox and a revised label 10/30/87. I resubmitted this (because it was lost at the Agency) in June of 1988 and handed you another copy in November 1989. I formally resubmitted these data and received another set of MRID Numbers. Because we've been around the mulberry bush, so to speak, with this simple, albeit necessary amendment, is there any way to expedite the review?

6. 2724-UEA: I submitted an efficacy protocol for Agency comments. This product is Zoecon RF-372 Collar. I was told that protocol reviews usually take a month. While I realize times given by EPA are estimates, this protocol has been with the Agency since 1/90.
7. 2724-375 and 2724-421: We met with EPA (team 17 and EEB) on 6 March to discuss removal of the fish habitat statement. We will formally submit this request on 11 April.
8. I'd like a written opinion regarding unit dose labeling. We currently have different unit dose bottles for each subregistration. A generic unit dose bottle would save substantially in production and inventory costs. Enclosed as Item 1 is the current label with arrows pointing to areas that would be revised for generic labeling. Enclosed as Item 2 is a "cut and paste" version of a generic label. The generic bottle is in total compliance with guidance from Federal Register Notice Vol. 49, No. 188, Wednesday, September 26, 1984, Proposed Rules, \$156.87 Unit packaging. This is the only guidance we can find regarding unit packaging.
9. I'd also like an opinion on the distributor product name: TOTAL Flea Control. We've never had any comment from EPA regarding the Notice of Supplemental Registration of Distributor application, where the distributor name first appears.

Best regards,



Kelly J. Parker  
Regulatory Specialist  
800/527-0512



ITEM 1

Bottle label ---->



See attached labeling for full precautions and directions for use.  
 Shake Well Before Use.  
 EPA Est. 2724-TX-1  
 EPA Reg. No. 2724-352-11788  
 Sold by  
**ZODIAC PET PRODUCTS**  
 A Division of Zoecon Corporation  
 12200 Denton Drive-Dallas, Texas 75234  
 A Sandoz Company  
 68451  
 1 FL. OZ. (29.6 ml)

# FleaTrol<sup>™</sup>

indoor concentrate

ACTIVE INGREDIENT: (S) Methoprene [isopropyl (2E, 4E, 7S)-11-methoxy-3, 7, 11-trimethyl-2, 4-dodecadienoate] 1%  
 INERT INGREDIENTS: 99%

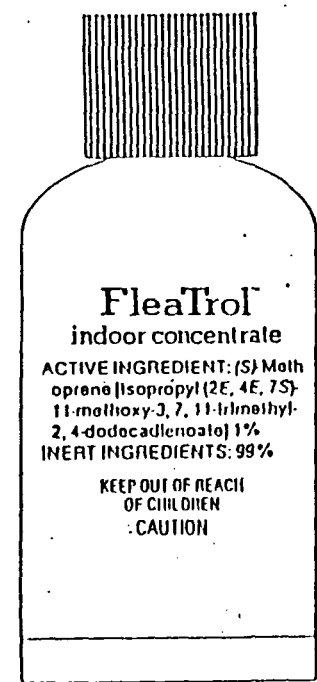
KEEP OUT OF REACH OF CHILDREN  
 CAUTION



# FleaTrol<sup>™</sup>

indoor concentrate  
 with PRECOR<sup>®</sup> insect growth regulator (IGR)

prevents adult fleas



lasts  
210 days

makes  
1 gallon

treats  
1500 sq. ft.

PRECOR<sup>®</sup> insect growth regulator prevents the emergence of adult fleas

**FleaTrol<sup>™</sup>**  
 indoor concentrate  
 ACTIVE INGREDIENT: (S) Methoprene [isopropyl (2E, 4E, 7S)-11-methoxy-3, 7, 11-trimethyl-2, 4-dodecadienoate] 1%  
 INERT INGREDIENTS: 99%  
 KEEP OUT OF REACH OF CHILDREN  
 CAUTION

1 FL. OZ. (29.6 ml)

SEE BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

**INTRODUCTION: FLEATROL<sup>™</sup> INDOOR CONCENTRATE** with PRECOR<sup>®</sup> Insect Growth Regulator (IGR) acts on an immature life stage of the flea, preventing the adult flea from developing. Flea eggs deposited on and larvae crawling onto treated areas will not develop into adult fleas. Existing adult fleas and flea pupae are not affected.

If a high population of adult fleas (the biting stage) is present, use of an adulticide may be necessary for immediate relief. For best results, use FLEATROL prior to flea season. When applied to surfaces where fleas are found, such as carpets, upholstered furniture and pet sleeping areas, FLEATROL prevents adult flea emergence for 210 days.

Flea control on pets is important in prevention of introduction of adult fleas indoors. When using this product, and fleas are problems on pets, pets should be treated with an effective registered flea control product to prevent the introduction of adult fleas indoors.

**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS—CAUTION:** Harmful if absorbed through the skin. Avoid contact with skin, eyes or clothing. In case of contact, immediately flush skin or eyes with plenty of water. Get medical attention if irritation persists.

**STATEMENT OF PRACTICAL TREATMENT:** If in eyes, flush with plenty of water. If irritation persists, call a physician. If swallowed, call a physician. Do not induce vomiting. If on skin, wash thoroughly with soap and water. If skin irritation occurs, call a physician. Remove contaminated clothing and wash before reuse.

**PHYSICAL OR CHEMICAL HAZARDS:** Do not use or store near heat or open flame.

**DIRECTIONS FOR USE** It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Shake Well Before Use.

This product may not be used or referenced as a source of ingredient in the formulation, manufacture or registration of any other products without prior written authorization from Zoecon Corporation.

**Method and Rate of Application:** Prepare a diluted spray solution by adding 1 oz. of FLEATROL CONCENTRATE to 1 gal. of water. Partially fill mixing container with water, add FLEATROL, shake, and fill to final volume. Shake before each use.

Apply at a rate of 1 gal. of diluted solution per 1500 sq. ft. of surface area with any low pressure sprayer typically used for indoor applications. Treat all areas which may harbor fleas, including carpets, furniture, pet sleeping areas and throw rugs. Treat under cushions of upholstered furniture. Avoid contact with treated surfaces until dry.

**Storage & Disposal:** Store in a cool place. Do not reuse empty container. Wrap container and put in trash collection.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

EPA Reg. No. 2724-352-11788 EPA Est. 58510-TX-1

Sold by **ZODIAC PET PRODUCTS** Made in USA  
 A Division of Zoecon Corporation  
 12200 Denton Drive U.S. Pat. 3,904,662; 3,912,815  
 Dallas, Texas 75234

**ZODIAC, FLEATROL, PRECOR** are A Sandoz Company  
 trademarks of Sandoz Ltd.

For information, call 1-800-850-4783. Z-32 68453

BOTTLE SHOWN FOR POSITIVE

Bottle Label--&gt;

See attached labeling for full precautions and directions for use.

EPA Est. 2724-TX-1  
EPA Reg. No. 2724-352Produced by  
Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, Texas 75234

1 FL. OZ. (29.6 ml)

FRONT OF CARD

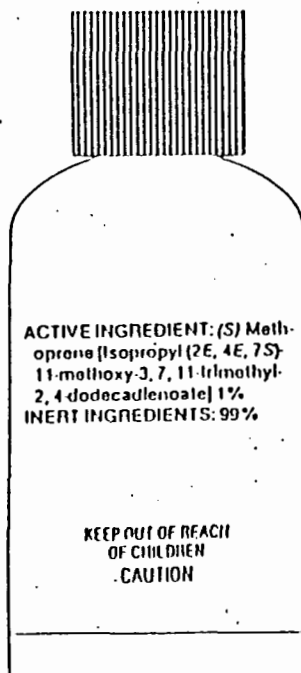


# FleaTrol<sup>™</sup>

## indoor concentrate

with PRECOR<sup>®</sup> insect growth regulator (IGR)

prevents adult fleas

ACTIVE INGREDIENT: (S) Methoprene [isopropyl (2E, 4E, 7S)-11-methoxy-3, 7, 11-trimethyl-2, 4-dodecadienoate] 1%  
INERT INGREDIENTS: 99%KEEP OUT OF REACH  
OF CHILDREN  
CAUTION

1 FL. OZ. (29.6 ml)

SEE BACK PANEL  
FOR ADDITIONAL  
PRECAUTIONARY STATEMENTS.lasts  
210 daysmakes  
1 gallontreats  
1500 sq. ft.PRECOR  
insect growth  
regulator  
prevents the  
emergence of  
adult fleasACTIVE INGREDIENT: (S) Methoprene [isopropyl (2E, 4E, 7S)-11-methoxy-3, 7, 11-trimethyl-2, 4-dodecadienoate] 1%  
INERT INGREDIENTS: 99%KEEP OUT OF REACH  
OF CHILDREN  
CAUTION

BACK OF CARD

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If a high population of adult fleas (the biting stage) is present, use of an adulticide may be necessary for immediate relief. For best results, use FLEATROL prior to flea season. When applied to surfaces where fleas are found, such as carpets, upholstered furniture and pet sleeping areas, FLEATROL prevents adult flea emergence for 210 days.

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PHYSICAL OR CHEMICAL HAZARDS: Do not use or store near heat or open flame.

DIRECTIONS FOR USE It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Shake Well Before Use.

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Method and Rate of Application: Prepare a diluted spray solution by adding 1 oz. of FLEATROL CONCENTRATE to 1 gal. of water. Partially fill mixing container with water, add FLEATROL, shake, and fill to final volume. Shake before each use. Apply at a rate of 1 gal. of diluted solution per 1500 sq. ft. of surface area with any low pressure sprayer typically used for indoor applications. Treat all areas which may harbor fleas, including carpets, furniture, pet sleeping areas and throw rugs. Treat under cushions of upholstered furniture. Avoid contact with treated surfaces until dry.

Storage &amp; Disposal: Store in a cool place. Do not reuse empty container. Wrap container and put in trash collection.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

EPA Reg. No. 2724-352-11706

EPA Est. 58510-TX-1

Sold by

ZODIAC PET PRODUCTS  
A Division of Zoecon Corporation  
12200 Denton Drive  
Dallas, Texas 75234

Made in USA

© 1989 Zoecon  
U.S. Pat. 3,904,662; 3,912,815ZODIAC, FLEATROL, PRECOR are  
trademarks of Sandoz Ltd.

A Sandoz Company

For information, call 1-800-850-4783.

Z-32

68453

BOTTLE SHOWN  
FOR POSITIONAL

STATUS OF EPA REG. NO. 2724-UUA, ZOECON RF-379 MOSQUITO GROWTH REGULATOR

February 8, 1990  
10:30 am

Attendees: Phil Hutton, PM-17  
Pat Bagley, Team 17  
Kelly J. Parker, Zoecon

KP - This product passed the preliminary screen for an expedited review (90 day turnaround). The submission date was 10/24/89. When can we expect registration?

PH - I would guess 1 year. Everything goes through chemistry...that's where the holdup is.

ZOECON CORPORATION  
12005 FORD ROAD, SUITE 800  
DALLAS, TEXAS 75234

UNATTENDED FAX #: 214/243-5613  
MAIN PHONE #: 214/243-2321  
TOLL FREE #: 800/527-0512  
TELEX #: 730775 ZOEDAL

DATE: 31 January 1990

TO: Phil Hutton/Pat Bagley #: 703/557-3106

LOCATION: U.S. EPA -- Team 17 -- Second Floor

FROM: Kelly J. Parker

NUMBER OF PAGES: 0 + COVER

I'd like to check the status of the following products during our meeting on 8 February at 10:30. Also, has a meeting been scheduled between Zoecon, EEB, Team 17 and Bob Sjogren for March?

2724-UUA: This product, Zoecon RF-379 Mosquito Growth Regulator, passed the preliminary screen for an expedited review. When can we expect registration? The product was submitted 10/24/89. This is an important product for mosquito control.

2724-UUT: This product, Zoecon RF-274 Combat Fogger, passed the preliminary screen for an expedited review. When can we expect registration? The product was submitted 11/7/89.

2724-UEO: This is Zoecon RF-330 ALTOSID Pellets. Original submission: 24 June 1988. This is another important product for mosquito control. The last we heard, it was in the chemistry queue. Is there any way to speed this up?

2724-361: We submitted tox and a revised label 10/30/87. I resubmitted this (because it was lost at the Agency) in June of 1988 and handed you another copy in November 1989. We can't get a registration at CDFA without a stamped revised label.

2724-UEA: I submitted an efficacy protocol for Agency comments. This product is Zoecon RF-372 Collar.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

11/16/89



Product Name: ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20  
Company Name: ZOECON CORPORATION  
Application No.: 132862  
EPA File Symbol: 2724-UUA  
EPA Receipt Date: 10/31/89

Subject: Front End Screen for a 'Me-Too' Registration

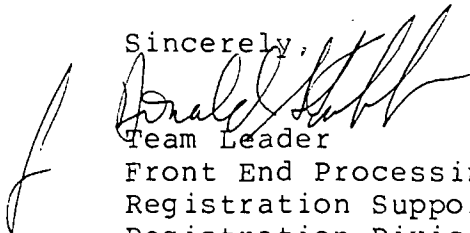
Dear Sir or Madam:

Your application for registration has been received by the Office of Pesticide Programs and has passed a preliminary screen for completeness. It will be placed in line for review to determine its acceptability. The application will be processed in chronological order of receipt.

Although the 1988 FIFRA amendments mandate EPA to review applications for expedited registration or amendments within 90 days, this turnaround time will not be met immediately due to the backlog of applications received before December 24, 1988. However, EPA is increasing human and automated resources and making necessary procedural changes in order to eliminate the backlog and to meet the 90-day response time as soon as possible.

If you have any questions, you may contact Phil Hutton, Product Manager 17, at (703)-557-2690.

Sincerely,

  
Team Leader

Front End Processing Staff  
Registration Support Branch  
Registration Division (H7504C)


 United States Environmental Protection Agency  
 Office of Pesticide Programs (TS-767)  
 Washington, DC 20460

**EXPEDITE**  
 Application for Pesticide: ☒ Registration  
☐ Amendment

OPP Identifier Number

**132862**

## Section I

 1. Company/Product Number **2724-2724-UUA** 2. Date **10/24/89** 3. Product Manager **Phil Hutton (17)** 4. Proposed Classification ☒ General ☐ Restricted

5. Name and Address of Applicant (Include ZIP Code)

 Zoecon Corporation  
 A Sandoz Company  
 12200 Denton Drive  
 Dallas, Texas 75234
☐ Check if this is a new address6. Product Name  
**Zoecon RF-379 Mosquito Growth Regulator SR-20**

## Section II - Amendment Information

 1. Subject: ☐ Resubmission in response to Agency letter ☐ Final printed label in response to Agency letter ☐ Other (explain below) Date of Letter

 Formula is same as ALTOSID Larvicide Concentrate, EPA Reg. No. 2724-393  
 Label is same as ALTOSID Liquid Larvicide, EPA Reg. No. 2724-392

## Section III

1. Material This Product Will Be Packaged In		2. Type of Container	
Child-Resistant Packaging	Unit Packaging	Water-Soluble Packaging	<input checked="" type="checkbox"/> Metal
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Plastic
	If "Yes,"	If "Yes,"	<input type="checkbox"/> Glass
	Unit package wgt No. per container	Package weight No. per container	<input type="checkbox"/> Paper
			<input type="checkbox"/> Other (Specify)
3. Location of Net Contents Information		4. Size(s) of Retail Container	
<input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		<b>1 gallon to 50 gallons</b>	
5. Location of Label Directions		6. Manner in Which Label Is Affixed To Product	
<input checked="" type="checkbox"/> On Label		<input checked="" type="checkbox"/> Lithograph <input type="checkbox"/> Other (Specify)	
<input type="checkbox"/> On material accompanying product		<input checked="" type="checkbox"/> Paper glued	
		<input checked="" type="checkbox"/> Stenciled	

## Section IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application).		6. Date Application Received (Stamp)	
Name <b>Kelly J. Parker</b>		<b>10/24/89</b>	
Title <b>Regulatory Specialist</b>		Telephone No. (Include Area Code) <b>214/838-8726</b>	
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.			
2. Signature <i>Kelly J. Parker</i>		3. Title <b>Regulatory Specialist</b>	
4. Typed Name <b>Kelly J. Parker</b>		5. Date Signed <b>10/24/89</b>	

**Zoecon Corporation**

A SANDOZ Company

12005 Ford Road, Suite 800, LB 44, Dallas, Texas 75234-7296

(214) 243-2321

October 24, 1989

Mr. Phil Hutton  
Product Manager (17)  
Insecticide-Rodenticide Branch (H7505C)  
Office of Pesticide Programs  
Document Processing Desk (APPL)  
U.S. Environmental Protection Agency  
Crystal Mall, Bldg. 2  
1921 Jefferson Davis Hwy.  
Arlington, VA 22202

RE: Zoecon RF-379 Mosquito Growth Regulator SR-20  
Application for New Registration  
Cite-All Method/Expedited Review

Dear Mr. Hutton:

The proposed product is identical to existing registered products. It is my understanding that under the expedited registration amendment to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA 1988) this application for a "similar" product will be granted (or denied) within 90 days.

The Zoecon RF-379 product formula is exactly the same as for ALTOSID Larvicide Concentrate, EPA Reg. No. 2724-393. The label is the same as that on file for ALTOSID Liquid Larvicide, EPA Reg. No. 2724-392.

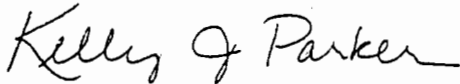
As noted above, the product formula for Zoecon RF-379 is equivalent to the ALTOSID Larvicide Concentrate, a manufacturing-use product that is diluted to formulate the Liquid Larvicide product. The Concentrate contains 20% (S)-methoprene, Liquid Larvicide contains 5% (S)-methoprene.

We would like to provide the 20% (S)-methoprene product with an end-use label. This end-use product will be used in the same manner and at the same use-rate as the current 5% Liquid Larvicide product.

Since Zoecon RF-379 is four times as concentrated as the Liquid Larvicide, four times less is required to achieve the same application rate. The proposed label is the same as the label approved by the Agency for the Liquid Larvicide on July 26, 1985 with the appropriate adjustments in the amount of concentrate required, as just described.

Zoecon RF-379 contains only food-cleared inerts, and no inerts of concern. Also, as noted above, the formula is essentially the same, and the application rate is exactly the same as for the Liquid Larvicide. Therefore, the exemptions from the requirement of a tolerance granted in connection with the registration of ALTOSID Liquid Larvicide are applicable to the proposed registration.

Best regards,

A handwritten signature in cursive script that reads "Kelly J. Parker".

Kelly J. Parker  
Regulatory Specialist  
800/527-0512

KJP:sw  
Enclosures





United States Environmental Protection Agency  
Office of Pesticide Programs (TS-767)  
Washington, DC 20460

**EXPEDITE**

Application for Pesticide: ☒ Registration  
☐ Amendment

OPP Identifier Number  
**132862**

## Section I

1. Company/Product Number 2724-	2. Date 10/24/89	3. Product Manager Phil Hutton (17)	4. Proposed Classification <input checked="" type="checkbox"/> General <input type="checkbox"/> Restricted
------------------------------------	---------------------	--	---

## 5. Name and Address of Applicant (Include ZIP Code)

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, Texas 75234

☐ Check if this is a new address

## 6. Product Name

Zoecon RF-379 Mosquito Growth Regulator SR-20

## Section II - Amendment Information

1. Subject <input type="checkbox"/> Resubmission in response to Agency letter <input type="checkbox"/> Final printed label in response to Agency letter <input type="checkbox"/> Other (explain below)	Date of Letter
---	----------------

Formula is same as ALTOSID Larvicide Concentrate, EPA Reg. No. 2724-393  
Label is same as ALTOSID Liquid Larvicide, EPA Reg. No. 2724-392

## Section III

1. Material This Product Will Be Packaged In		2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes," Unit package wgt. No. per container	Water-Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes," Package weight No. per container	<input checked="" type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify)
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) of Retail Container 1 gallon to 50 gallons	
5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On material accompanying product		6. Manner in Which Label is Affixed To Product <input checked="" type="checkbox"/> Lithograph <input type="checkbox"/> Other (Specify) <input checked="" type="checkbox"/> Paper glued <input checked="" type="checkbox"/> Stenciled	

## Section IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application).

Name

Kelly J. Parker

Title  
Regulatory Specialist

Telephone No. (Include Area Code)  
214/888-8726

6. Date Application Received  
(Stamped)

**Certification**  
I certify that the statements I have made on this form and all attachments thereto are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature

*Kelly J. Parker*

3. Title

Regulatory  
Specialist

4. Typed Name

Kelly J. Parker

5. Date Signed

10/24/89



## Certification with Respect to Citation of Data

Form Approved  
OMB No. 2070-0060  
Approval expires 9-30-90

Applicant's Name and Address  Zoecon Corporation A Sandoz Company 12200 Denton Drive Dallas, Texas 75234	EPA File Symbol/Registration Number  2724-
	Product Name  Zoecon RF-379 Mosquito Growth Regulator SR-20
	Date of Application  10/24/89

1. This application is supported by all data submitted or cited in the application. In addition, if cite-all options are indicated, this application is supported by all data in the Agency's files that concern the properties or effects of this product or of any other product that is identical or substantially similar, and that is one of the types of data that would be required to be submitted if this application sought the initial registration of a product of identical or similar composition and intended uses under the data requirements in effect on the date of approval of this application.

2. I certify that, for each study cited in support of this application for registration that is an exclusive use study, I am the original data submitter, or have obtained the written permission of the original data submitter to cite that study.

3. I certify that, for each study cited in support of this application for registration that is not an exclusive use study:

I am the original data submitter; or I have obtained the written permission of the original data submitter to cite that study; or

I have notified in writing the companies who have submitted data I have cited to support this application and have offered to: (a) Pay compensation for those data in accordance with section 3(c)(1)(D) and 3(c)(2)(D) of the Federal Insecticide, Fungicide and Rodenticide Act; and (b) Commence negotiations to determine which data are subject to the compensation requirement of FIFRA and the amount and terms of compensation due, if any. The companies I have notified are: *(Check one)*

☒ All companies listed on the Pesticide Data Submitters List for all active ingredients contained in my product (cite-all method or cite-all option under Selective Method). *(Also sign the General Offer to Pay Statement below.)*

☐ Those companies who have submitted the studies which I have cited (Selective method).

Signature <i>Kelly J. Parker</i>	Name and Title Kelly J. Parker Regulatory Specialist	Date 10/24/89
-------------------------------------	--	------------------

**General Offer to Pay:** I hereby offer and agree to pay compensation to other persons, with regard to the approval of this application, to the extent required by FIFRA sec. 3(c)(1)(D) and 3(c)(2)(D).

Signature <i>Kelly J. Parker</i>	Name and Title Kelly J. Parker Regulatory Specialist	Date 10/24/89
-------------------------------------	--	------------------

*\*Confidential Statement of Formula may be entitled to confidential treatment\**

# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

Prevents Emergence of  
Adult Floodwater Mosquitoes

ACTIVE INGREDIENT:  
(S)-Methoprene [Isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-  
dodecadienoate]..... 20%  
INERT INGREDIENTS..... 80%

Contains 1.72 lb/gal (205.2 g/liter) active ingredient

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

See Back Panel For Additional Cautions

Because of the unique mode of action of A.L.L.<sup>TM</sup> Concentrate, successful use requires familiarity with special techniques recommended for application timing and treatment evaluation. See Guide to Product Application or consult local Mosquito Abatement Agency.

## NET CONTENTS:

### PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Instructions for Use -- 1. **SHAKE WELL BEFORE USING.** Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution. 2. Do not mix with oil; use clean equipment. 3. Partially fill spray tank with water, then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable. 4. Spray solution should be used within 48 hours. Always agitate before spraying.

**RECOMMENDED APPLICATIONS --** Introduction: Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

**Methods of Application -- Aerial:** Use the recommended amount of Zoecon RF-379 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-379 in the appropriate volume of water to give the rate per acre recommended below.

**Application Rate:** Apply 3/4 to 1 fl.oz. of Zoecon RF-379 per acre (55 to 73 ml/hectare) in water as directed.

**Application Sites -- Pastures:** Zoecon RF-379 may be applied after each flooding without removal of grazing livestock.

**Rice:** Zoecon RF-379 must be applied to 2nd, 3rd and/or 4th instar larvae of mosquitoes found in rice, usually within 4 days after flooding. Use only where multiple flooding rice culture is practiced. Zoecon RF-379 treatment may be repeated with each flooding. Do not apply after rice reaches the heading stage of growth.

**Intermittently Flooded Noncrop Areas:** Zoecon RF-379 may be applied as directed above when flooding may result in floodwater mosquito hatch. Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions. Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-379 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**Mixing and Handling Instructions:** 1. Add measured amount of Zoecon RF-379 to spray tank partially filled with water, mix and complete filling with recommended quantity of water. 2. Use diluted spray solution within 48 hours of mixing. Agitate before each use.

**STORAGE & DISPOSAL --** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer to recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company

12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-  
U.S. Pats. 3,904,662; 3,912,815  
0189-A:0145E

EPA Est 55947-CA-1  
c 1985 Zoecon  
Made in U.S.A.



## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-379, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-379 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides.

Zoecon RF-379 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-379 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides.

After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive.

Because the effect of Zoecon RF-379 is neither death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

### CHECKLIST

Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

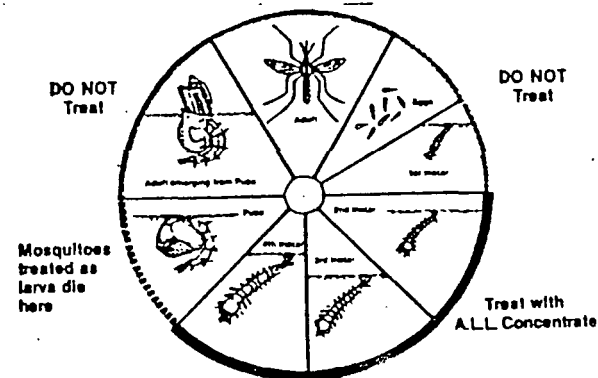
DO the following:

1. DO treat second, third and/or fourth larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

## LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20



### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredients reach the water where they are released from the sand. ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100-pound batch of ALTOSAND:

- 99 lbs. washed, dry sand (20-45 mesh)
- 0.5 lbs. Zoecon RF-379, (7.5 fluid oz.)
- 0.5 lbs. Hlsil 233 (silicon dioxide)
- Small funnel
- Cement mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer place 99 pounds of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 pound (7.5 fluid ounces) Zoecon RF-379, onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379, (usually five to ten minutes).
4. Stop the mixer and add 0.5 pound of Hlsil 233. Cover the mixture to reduce dust. Start the mixer and run for approximately five minutes. (The quantity of Hlsil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture on the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in step No. 1. Add more Hlsil if it flows significantly slower and reduce the amount of Hlsil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of eight to ten pounds of the final mixture per acre using standard granular dispersal equipment.

ZOECON CORPORATION  
TECHNOLOGY DEVELOPMENT  
Memorandum

Date: 23-Oct-1989 03:49pm CST  
From: Kelly Parker  
PARKER  
Tel No: 214/888-8726

TO: Richard Fresh

( FRESH )

CC: Lynn Williams

( WILLIAMS )

CC: Sharon Wood

( WOOD )

Subject: SR-20 end-use product labeling

We never received a file symbol for this product (Zoecon RF-379 Mosquito Growth Regulator SR-20). We delivered it 2/2/89. I will ask Phil its whereabouts, but my intuition tells me that it will be faster to resubmit and ask for an expedited review. Comments, si vous plez?

A SANDOZ Company

31 January 1989

RE: Zoecon RF-379 Mosquito Growth Regulator SR-20  
Application for New Registration  
Cite-All Method/Formulators Exemption/Exemption

The proposed product is identical to existing registered products. It is my understanding that under the expedited registration amendment to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA 1988) this application for a "similar" product will be granted (or denied) within 90 days.

As noted above, the product formula for Zoecon RF-379 is equivalent to the ALTOSID Larvicide Concentrate, a manufacturing-use product that is diluted to formulate the Liquid Larvicide product. The Concentrate contains 20% (S)-methoprene; Liquid Larvicide contains 5% (S)-methoprene.

Since RF-379 is four times as concentrated as the Liquid Larvicide, four times less is required to achieve the same application rate. The proposed label is the same as the label approved by the Agency for the Liquid Larvicide on July 26, 1985 with the appropriate adjustments in the amount of concentrate required, as just described.

219

application rate is exactly the same as for the Liquid Larvicide. Therefore, the exemptions from the requirement of a tolerance granted in connection with the registration of ALTOSID Liquid Larvicide are applicable to the proposed registration.

Best regards,

A handwritten signature in cursive script that reads "Kelly J. Parker".

Kelly J. Parker  
Regulatory Specialist  
(800)527-0512

ENDSR20EPA/lgw

**Zoecon Corporation**

A SANDOZ Company

12005 Ford Road, Suite 800, LB 44, Dallas, Texas 75234-7296  
(214) 243-2321

31 January 1989

Mr. Phil Hutton  
Product Manager (17)  
Insecticide-Rodenticide Branch  
Registration Division (TS-767)  
U.S. Environmental Protection Agency  
Crystal Mall, Bldg. 2  
1921 Jefferson Davis Hwy.  
Arlington, VA 22202

RE: Zoecon RF-379 Mosquito Growth Regulator SR-20  
Application for New Registration  
Cite-All Method/Formulators Exemption

Dear Mr. Hutton:

The proposed product is identical to existing registered products. It is my understanding that under the expedited registration amendment to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA 1988) this application for a "similar" product will be granted (or denied) within 90 days.

The Zoecon RF-379 product formula is exactly the same as for ALTOSID Larvicide Concentrate, EPA Reg. No. 2724-393. The label is the same as that on file for ALTOSID Liquid Larvicide, EPA Reg. No. 2724-392.

As noted above, the product formula for Zoecon RF-379 is equivalent to the ALTOSID Larvicide Concentrate, a manufacturing-use product that is diluted to formulate the Liquid Larvicide product. The Concentrate contains 20% (S)-methoprene; Liquid Larvicide contains 5% (S)-methoprene.

We would like to provide the 20% (S)-methoprene product with an end-use label. This end-use product will be used in the same manner and at the same use-rate as the current 5% Liquid Larvicide product.

Since RF-379 is four times as concentrated as the Liquid Larvicide, four times less is required to achieve the same application rate. The proposed label is the same as the label approved by the Agency for the Liquid Larvicide on July 26, 1985 with the appropriate adjustments in the amount of concentrate required, as just described.

Zoecon RF-379 contains only food-cleared inerts, and no inerts of concern. Also, as noted above, the formula is essentially the same, and the



- 2 -

application rate is exactly the same as for the Liquid Larvicide. Therefore, the exemptions from the requirement of a tolerance granted in connection with the registration of ALTOSID Liquid Larvicide are applicable to the proposed registration.

Best regards,

A handwritten signature in cursive script that reads "Kelly J. Parker".

Kelly J. Parker  
Regulatory Specialist  
(800)527-0512

ENDSR20EPA/lgw

*\*Confidential Statement of Formula may be entitled to confidential treatment\**

# ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20

Prevents Emergence of  
Adult Floodwater Mosquitoes

ACTIVE INGREDIENT:  
(S)-Methoprene [Isopropyl (2E,4E,7S)-  
11-methoxy-3,7,11-trimethyl-2,4-  
dodecadienoate]..... 20%  
INERT INGREDIENTS..... 80%

Contains 1.72 lb/gal (205.2 g/liter) active ingredient

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

See Back Panel For Additional Cautions

Because of the unique mode of action of A.L.L.™ Concentrate, successful use requires familiarity with special techniques recommended for application timing and treatment evaluation. See Guide to Product Application or consult local Mosquito Abatement Agency.

## NET CONTENTS:

### PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS - CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**Instructions for Use --** 1. **SHAKE WELL BEFORE USING.** Zoecon RF-379 may separate on standing and must be thoroughly agitated prior to dilution. 2. Do not mix with oil; use clean equipment. 3. Partially fill spray tank with water, then add the recommended amount of Zoecon RF-379, agitate and complete filling. Mild agitation during application is desirable. 4. Spray solution should be used within 48 hours. Always agitate before spraying.

**RECOMMENDED APPLICATIONS --** Introduction: Zoecon RF-379 must be applied to 2nd, 3rd, or 4th larval instars of floodwater mosquitoes to prevent adult emergence. Treated larvae continue normal development to the pupal stage where they die. This insect growth regulator has no effect when applied to pupae or adult mosquitoes. Zoecon RF-379 has sufficient field life to be effective at recommended rates when applied to larval stages under varying field conditions. For further information, see Guide to Product Application.

**Methods of Application -- Aerial:** Use the recommended amount of Zoecon RF-379 listed below in sufficient water to give complete coverage. One-half to 5 gals. of spray solution per acre is usually satisfactory. Do not apply when weather conditions favor drift from areas treated.

**Ground:** Determine the average spray volume used per acre by individual operators and/or specific equipment. Mix Zoecon RF-379 in the appropriate volume of water to give the rate per acre recommended below.

**Application Rate:** Apply 3/4 to 1 fl.oz. of Zoecon RF-379 per acre (55 to 73 ml/hectare) in water as directed.

**Application Sites -- Pastures:** Zoecon RF-379 may be applied after each flooding without removal of grazing livestock.

**Rice:** Zoecon RF-379 must be applied to 2nd, 3rd and/or 4th instar larvae of mosquitoes found in rice, usually within 4 days after flooding. Use only where multiple flooding rice culture is practiced. Zoecon RF-379 treatment may be repeated with each flooding. Do not apply after rice reaches the heading stage of growth.

**Intermittently Flooded Noncrop Areas:** Zoecon RF-379 may be applied as directed above when flooding may result in floodwater mosquito hatch. Typical sites include freshwater swamps and marshes, woodland pools and meadows, dredging spoil sites, drainage areas, waste treatment and settling ponds, ditches and other natural and man-made depressions. Around estuarine areas, treat high salt marsh or tidal marsh above high tide water level.

**Dense vegetation or canopy areas:** Apply a Zoecon RF-379 sand mixture using standard granular dispersal equipment. For detailed preparation instructions, refer to Guide to Product Application.

**Mixing and Handling Instructions:** 1. Add measured amount of Zoecon RF-379 to spray tank partially filled with water, mix and complete filling with recommended quantity of water. 2. Use diluted spray solution within 48 hours of mixing. Agitate before each use.

**STORAGE & DISPOSAL --** Store in cool place, away from other pesticides, food and feed. In case of leakage or spill, soak up with sand or another absorbent material. Triple rinse or equivalent. Then offer to recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

Seller makes no warranty, express or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and handling of this material when such use and handling are contrary to label instructions.

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

EPA Reg. No. 2724-  
U.S. Pats. 3,904,662; 3,912,815  
0189-A:0145E

EPA Est 55947-CA-1  
c. 1985 Zoecon  
Made in U.S.A.

## GUIDE TO PRODUCT APPLICATION

### FOR THE FIRST TIME USER

Zoecon RF-379 Mosquito Growth Regulator SR-20 is the result of extensive research into the intricacies of natural biochemical and physiological development of insects. New chemical technology and biological findings were combined to develop a unique mosquito larvicide.

Zoecon RF-379, an insect growth regulator (IGR), acts by inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result in the failure of adult mosquitoes to emerge from pupae. Zoecon RF-379 is not a conventional pesticide. It does not produce the nondiscriminatory rapid, directly toxic effects that are associated with traditional larvicides.

Zoecon RF-379 differs from other larvicides you may have used only in the manner and time course of its action after application.

Zoecon RF-379 is applied to second, third or fourth instar larvae using standard larviciding equipment in a manner similar to other larvicides.

After application to second, third or fourth instar larvae at recommended rates, absolutely no effects on larvae will be observed. They will continue developing normally and will pupate. Pupae will appear unaffected, but will eventually die. Adults will not emerge. Infrequently, a few adults may be seen at the water surface but they will have abnormalities preventing flight and will not survive.

Because the effect of Zoecon RF-379 is neither death nor widespread mortality immediately following pupation, the number of adults which emerge is the only criterion for accurately assessing control. Checks by dip counts during larval and pupal stages will give no measure of effectiveness.

Refer to the following diagram and checklist, in addition to label instructions for guidance in timing of application and performance evaluation. They will assist you in obtaining the best possible results with this unique product.

### CHECKLIST

Things to remember when using Zoecon RF-379 Mosquito Growth Regulator SR-20

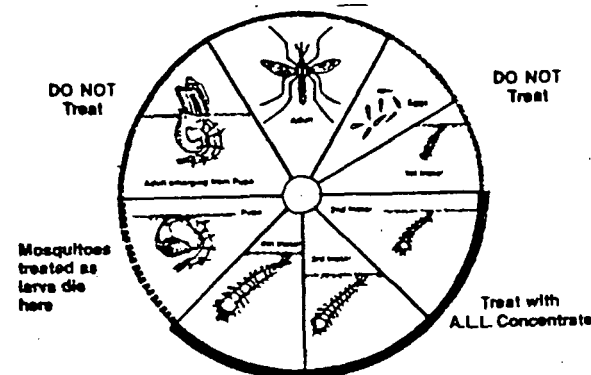
DO the following:

1. DO treat second, third and/or fourth larvae, not pupae or adults. (First instar larvae are so small they are not readily detectable.)
2. DO wait until treated larvae have pupated. Then collect pupae and transfer to laboratory to observe for emergence of adults.
3. DO observe pupae for several days, since death of IGR treated mosquitoes occurs when pupae would normally emerge as adults. (Careful observation is necessary since dead pupae decompose rapidly and thus are not easily seen.)
4. DO monitor emerging adults at the treatment site. This absolutely requires that emergence traps be placed in treatment areas to capture adult mosquitoes as they emerge.

DO NOT do the following:

1. DO NOT take dip counts of larvae after treatment for the purpose of performance evaluation. Normal looking larvae will be present.
2. DO NOT take dip counts of pupae after treatment for the purpose of performance evaluation. Normal looking pupae will be seen but these will not develop into normal adults.
3. DO NOT think Zoecon RF-379 has failed if some adult mosquitoes are flying in treated areas; they probably have flown in from nearby untreated areas. Numbers 2 and 4 of the "DO" checklist are the only methods of accurately assessing effectiveness.
4. DO NOT spray again, either with Zoecon RF-379 or a conventional insecticide, because larvae or pupae are present after application. This is normal. The effectiveness of Zoecon RF-379 can only be measured by lack of adult emergence.

## LIFE CYCLE OF MOSQUITO WHEN TO APPLY ZOECON RF-379 MOSQUITO GROWTH REGULATOR SR-20



### Preparation of ALTOSAND® Granular Formulation

An "On-Site" Method of Preparing a Granular Formulation of Zoecon RF-379 Mosquito Growth Regulator SR-20

### INTRODUCTION

A method of application of Zoecon RF-379, using sand as a carrier, has been developed for use in floodwater mosquito breeding areas with dense vegetation or canopy. The characteristics of ALTOSAND provide excellent foliage penetration, insuring that the active ingredients reach the water where they are released from the sand. ALTOSAND will prevent the emergence of species of the floodwater mosquito complex when applied to second, third or fourth larval instars at a rate of eight to ten pounds per acre.

### PREPARATION INSTRUCTIONS

The following materials are required to prepare a 100-pound batch of ALTOSAND:

- 99 lbs. washed, dry sand (20-45 mesh)
- 0.5 lbs. Zoecon RF-379, (7.5 fluid oz.)
- 0.5 lbs. Hissil 233 (silicon dioxide)
- Small funnel
- Cement mixer

1. Measure the time required for a level funnel full of sand to empty.
2. Into a rotating-type mixer place 99 pounds of dry (20-45 mesh) sand. While the mixer is rotating, slowly pour 0.5 pound (7.5 fluid ounces) Zoecon RF-379, onto the sand. (If better wetting is required, Zoecon RF-379 may be diluted in up to an equal volume of water.)
3. Mix until the sand is uniformly coated with Zoecon RF-379, (usually five to ten minutes).
4. Stop the mixer and add 0.5 pound of Hissil 233. Cover the mixture to reduce dust. Start the mixer and run for approximately five minutes. (The quantity of Hissil 233 necessary to achieve a dry, free-flowing mixture will vary depending on the particle size distribution and moisture on the sand.)
5. Compare the flow rate of the ALTOSAND mixture with that of untreated sand in step No. 1. Add more Hissil if it flows significantly slower and reduce the amount of Hissil in subsequent batches if the mixture flows at the same or a faster rate and is excessively dusty.

### APPLICATION RATE AND METHODS

Apply at a rate of eight to ten pounds of the final mixture per acre using standard granular dispersal equipment.



U.S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF PESTICIDE PROGRAM (TS-767)  
WASHINGTON, D.C. 20460

## APPLICATION FOR PESTICIDE:

☒ REGISTRATION  
☐ AMENDMENT

Please read instructions  
on reverse before com-  
pleting.

## SECTION I

1. COMPANY/PRODUCT NO. 2724- 2. DATE 1/31/89 3. PRODUCT MANAGER Phil Hutton (17) 4. PROPOSED CLASSIFICATION ☒ GENERAL ☐ RESTRICTED

## 5. NAME AND ADDRESS OF APPLICANT (Include ZIP Code)

Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, Texas 75234

☐ CHECK IF THIS IS A NEW ADDRESS

## 6. PRODUCT NAME

Zoecon RF-379 Mosquito Growth Regulator SR-20

## SECTION II

## 1. SUBJECT OF AMENDMENT

- ☐ RESUBMISSION IN RESPONSE TO AGENCY LETTER DATED \_\_\_\_\_  
☐ FINAL PRINTED LABEL IN RESPONSE TO AGENCY LETTER DATED \_\_\_\_\_  
☐ OTHER (explain below)

## SECTION III

## 1. WILL THIS PRODUCT BE PACKAGED IN:

CHILD-RESISTANT PACKAGING ☐ YES ☒ NO

UNIT PACKAGING ☐ YES ☒ NO

If YES, unit pkg. wt. \_\_\_\_\_ No. per container \_\_\_\_\_

WATER-SOLUBLE PACKAGING ☐ YES ☒ NO

If YES, pkg. wt. \_\_\_\_\_ No. per container \_\_\_\_\_

## 2. TYPE OF CONTAINER

- ☒ METAL  
☒ PLASTIC  
☐ GLASS  
☐ PAPER  
☐ OTHER (Specify)

## 3. LOCATION OF NET CONTENTS

☒ LABEL ☐ CONTAINER

## 4. SIZE(S) OF RETAIL CONTAINER

1 gallon to 50 gallons

## 5. LOCATION OF LABEL DIRECTIONS

☒ ON LABEL

☐ ON MATERIAL ACCOMPANYING PRODUCT

## 6. MANNER IN WHICH LABEL IS AFFIXED TO PRODUCT

- ☒ LITHOGRAPH ☐ OTHER (Specify)  
☒ PAPER GLUED  
☒ STENCILED

## SECTION IV

1. CONTACT POINT (Complete items directly below for identification of individual to be contacted, if necessary, to process this application).

NAME

Kelly J. Parker

TITLE

Regulatory Specialist

TELEPHONE NO. (Include Area Code)

214/888-8726

2. SIGNATURE

*Kelly J. Parker*

3. TITLE

Regulatory Specialist

4. TYPED NAME

Kelly J. Parker

5. DATE SIGNED

1/31/89

6. DATE APPLICATION RECEIVED (Stamped)



ATTACHMENT A  
FORMULATOR'S EXEMPTION STATEMENT

EPA File Symbol or Product Registration Number: 2724-

Applicant's Name and Address: Zoecon Corporation, A Sandoz Company  
12200 Denton Drive, Dallas, Texas 75234

As an authorized representative of the applicant for registration of the product identified above, I hereby certify that:

(1) Our product is an end-use product, and it contains the active ingredient(s) (S)-methoprene

(2) Each active ingredient listed in paragraph (1) is present solely as the result of the incorporation into the product (during formulation or packaging) of another product which contains that active ingredient, which is registered under FIFRA Section 3, and which is purchased by us from another producer.

(3) Indicate by circling the appropriate text which paragraph applies:

(A) An accurate Confidential Statement of Formula for the above identified product is attached to this statement. That formula statement indicates, by company name, registration number, and product name, the source of the active ingredient(s) listed in paragraph (1).

OR

(B) The Confidential Statement of Formula dated \_\_\_\_\_ on file with the EPA is complete, current and accurate and contains the information requested on the current CSF form No. 8570-4. The registered source(s) of the active ingredient(s) listed in paragraph (1) is/are listed below.

Active Ingredient

Source: Product Name and Registration No.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Applicant's authorized representative:

Kelly J. Parker  
(Signature)

Kelly J. Parker  
(Typed)

Dated: 1/31/89

**CERTIFICATION WITH RESPECT TO CITATION OF DATA**

EPA File Symbol/Reg. No. 2724- Date of application 1/31/89  
 Name of Product Zoecon RF-379 Mosquito Growth Regulator SR-20  
 Applicant's Name and Address Zoecon Corporation  
A Sandoz Company  
12200 Denton Drive  
Dallas, Texas 75234

1. This application is supported by all data submitted or cited in the application. In addition, if cite-all options are indicated, this application is supported by all data in the Agency's files that concern the properties or effects of this product or of any other product that is identical or substantially similar, and that is one of the types of data that would be required to be submitted if this application sought the initial registration of a product of identical or similar composition and intended uses under the data requirements in effect on the date of approval of this application.

2. I certify that, for each study cited in support of this application for registration that is an exclusive use study, I have obtained the written permission of the original data submitter to cite that study.

3. I certify that, for each study cited in support of this application for registration that is not an exclusive use study:

I have obtained the written permission of the original data submitter to cite that study; or

I have notified in writing the companies who have submitted data I have cited to support this application and have offered to: (a) Pay compensation for those data in accordance with section 3(c)(1)(D) and 3(c)(2)(D) of the Federal Insecticide, Fungicide and Rodenticide Act; and (b) Commence negotiations to determine which data are subject to the compensation requirement of FIFRA and the amount and terms of compensation due, if any. The companies I have notified are: (Check one)

☒ All companies listed on the Pesticide Data Submitters List for all active ingredients contained in my product (Cite-all method or cite-all option under Selective Method). (Also sign the General Offer to Pay Statement below.)

☐ Those companies who have submitted the studies which I have cited (Selective method)

Date 1/31/89

Signature Kelly J. Parker  
Kelly J. Parker

Title Regulatory Specialist

**General Offer to Pay:** I hereby offer and agree to pay compensation to other persons, with regard to the approval of this application, to the extent required by FIFRA sec. 3(c)(1)(D) and 3(c)(2)(D).

Date 1/31/89

Signature Kelly J. Parker  
Kelly J. Parker  
 Title Regulatory Specialist